AMERICAN VETERINARY REVIEW.

JUNE, 1898.

All communications for publication or in reference thereto should be addressed to Prof. Roscoe R. Bell, Seventh Ave. & Union St., Borough of Brooklyn, New York City.

EDITORIAL.

EUROPEAN CHRONICLES.

TUBERCULOSIS.—VARIOLA.—AMERICAN HORSES.

The Society of the Agriculteurs of France is the most important of its kind in that country, its membership is very large, and in it are found some of the most intelligent workers in behalf of agriculture. A general meeting is held annually, when subjects of importance and of interest to the whole community are freely discussed. At the last reunion, which took place in the month of March, three subjects received attention, of which two are interesting to the readers of the REVIEW as veterinarians, and a third which has more relation to American trade. Of the former, one is on the subject of tuberculosis. This affection is at present engaging very much the attention of sanitary veterinarians all over the world, and, while the laws here regulating their duties are pretty explicit, there exist still in them some discrepancies. It is to fill these defects that the general government had been called upon to issue more stringent laws, by the presentation of the following, offered under the shape of a wish: "That the authorities resort to all measures likely to prevent the spreading of tuberculosis among our animals, in applying the principle of indemnity in its widest sense." Besides this recommendation of larger indemnity, it means to refer also to obligatory tuberculination, for herds where one single case has been detected. This would certainly be very advantageous in diminishing the dangers of

contagion; each case detected being then isolated, excluded from public fields, roads or markets, and only allowed to go to the slaughter-houses.

This wish demands also the passage of a law by which, "in case, when, after slaughtering, tuberculosis is found to be localized, the buyer be only entitled to the restitution of the value of the contaminated portions of the carcass." A question of jurisprudence which is but right. It is well known that in France, to be rejected by meat inspectors a whole carcass must be rejected and the disease generalized; if it is localized, only the affected part is thrown to the offals. This is a measure which our esteemed friend, Dr. Peters, has carried out in Massachusetts.

Variola has also occupied the attention of one section of the Société. France draws many of her sheep from Algeria, and Algerian sheep have often been the cause of outbreaks of the disease on French soil, where they have done much harm. A measure of local importance has been demanded, viz., that at least fifty days previous to the day of embarking, all Algerian sheep should be vaccinated and marked with an official stamp, as an evidence that they have been submitted to that measure.

While the two preceding measures have only a special local interest, and for our readers one of curiosity, the third measure, which I mentioned above, refers to American exportation, and on that account interests us all. Not satisfied with the protection that France has accorded to her breeders and raisers of cattle, principally those of Normandy, by which the importation of American cattle was cut short, a more and not less important move has been started with an object which, if it is realized, might considerably diminish the trade of American horses with France. The wish presented by the "Société des Agriculteurs" is to the effect that imported horses shall be subjected to a tax of $40 a head, that they will be submitted to a quarantine of same length that is imposed upon French horses exported to other countries; that horses imported into France shall be branded under the mane with a hot iron to avoid frauds. Ex-

ceptions are granted to these measures for thoroughbreds, race-horses, and animals bought by the State.

Of course, these wishes are only the expressions of votes made at a meeting, and from that to the passage of laws complying with the request. We know by our own experience how it is done in the States; therefore, there is no great need for American traders to be afraid. American horses have been lately imported extensively into France; they are liked; they are a success. There is no need to be anxious.

The reasons presented for the justice of the wish are: "First. That it is known that American horses have brought into France and into England contagious diseases of the greatest severity. Second. That French horses are submitted to a quarantine of 90 days in American ports, while none is imposed on American products here."

Decidedly, we fear that French authorities know but little about the sanitary conditions of the live stock in America, and probably less of our sanitary measures. We do not know that any infectious diseases can have been imported from America to European horses, as Europe has already every contagious affection that we possess. We do know, on the contrary, that France but a few years ago sent to America "dourine"; and we are not aware of any 90 days' quarantine to which horses are submitted.

The only justifiable excuse for the new protective measure is that the enormous increase of importation into France may interfere with the raising of horses in that country, and consequently constitute a national and public danger. According to statistics, it is stated that during the last six years American importations into Europe have been: For 1893, 2500 horses; 1894, 5000; 1895, 13,500; 1896, 25,000; 1897, 40,000, and since the beginning of 1898 more than 20,000.

It is gratifying to hear that before acting in the matter two governmental commissioners have been appointed to go to America to study the question at large. A. L.

GET READY FOR OMAHA.

An event of more than ordinary import is to occur in September next, the outcome of which will have a great influence upon the immediate history of veterinary medicine in the United States. At the city of Omaha, in the State of Nebraska, the United States Veterinary Medical Association will convene in annual session on the 6th, 7th, and 8th of September, and every prospect seems bright for the most representative and truly national gathering of veterinarians that has assembled during the thirty-five years of its existence. On the successful outcome of this year's convention from the various standpoints of the quality and character of the deliberations, attendance, and general influence will be the justification of the effort to overcome the tendency toward a sectional organization instead of a national one, as its name implies. There can be no two opinions as to the gratitude which the profession of the union owes to the East for its tender nursing of the infant association during the trying period of its early years, and we do not believe that it will withhold the expression of its obligations. Its maturity having been reached, its development being robust and healthy, there seems to be no reason why it should not be sent forth to do what good it can—the object of its incubation, the cause of its nurturing, and the aim and ambition of its progenitors. In its early days there were but few veterinarians in the East and North, fewer in the West, and none in the South. The course pursued was the only possible one, and no other section can be blamed for withholding its coöperation, for there were no number of men to take part in its burdens and its glories. But now there have sprung up in the East, in the West, in the North and in the South a whole phalanx of brilliant and enthusiastic men, educated, devoted to the science of veterinary medicine, and who need the strong influence of the Association as much as she needs them among her list of members. The meeting place should be as nearly central as possible—equally accessible to every point of the national compass, and a divergence from this principle is an injury to the Association. The East, participating so con-

spicuously in the glorious history of the organization, should feel a pride in saying to the balance of the nation: "We have brought the weakling up to robust manhood; we now send it forth as a blessing to you all." And the West and the North and the South should feel great pride in the opportunities thus afforded them. Certainly the East will not be so pessimistic as to endeavor to control her meetings, her influence, and her government in a spirit of jealousy and selfishness, saying that as she was the bone and sinew of her young days, so she should keep it to herself by rendering it next to impossible for the profession of other sections to attend the meetings and participate in the proceedings.

Possibly no more central location could have been found than Omaha; surely no more enthusiastic welcome could be given her membership than will be extended by the veterinarians of Nebraska, and, assembling in that beautiful city during the Trans-Mississippi Exposition, with all its attractions and advantages in railroad fares and accommodations, the event will be doubly attractive. The notes which have from month to month appeared in the REVIEW relative to the developing programmes of the session and the committee of arrangements, bear positive evidence that the forthcoming meeting is to be one fraught with the greatest interest and pleasure to every phase of the membership. The trip from the East and North will be a most delightful one; every hard-working veterinarian is entitled to some vacation, and it is hard to conceive how it can be more pleasantly and profitably spent than by journeying to this rapidly developing section of our country and engaging actively in the deliberations of the national association. You owe it to your profession, your country, and yourselves. And we firmly believe that the wisdom of the choice of this conception of the location will be proven by the largest increase in membership that has ever occurred at any one meeting, unpropitious as the times avowedly are.

"TUBERCULIN, SLAUGHTER AND SANITATION IN THE ERADICATION OF TUBERCULOSIS," is the title of an extremely valuable and interesting article contributed to this month's REVIEW by that sterling observer and writer, G. N. Kinnell, of Pittsfield, Mass. It is the prosecution of such practical experiments and their collection and presentation which go to build up our pathological knowledge, and the profession must feel under a debt of gratitude to the author for his painstaking and complete data and deductions.

ORIGINAL ARTICLES.

TUBERCULIN, SLAUGHTER AND SANITATION IN THE ERADICATION OF TUBERCULOSIS.

BY GEORGE N. KINNELL, VETERINARIAN, PITTSFIELD, MASS.

As bearing on the question of eradicating tuberculosis from a diseased herd and of the competent disinfection of a tuberculosis-infected building, I beg to submit report of my experience in two cases, an experience which has stood the test of the past four years, and where the conditions which obtain to-day are to all appearances and in every probability entirely satisfactory.

First we will take the herd of Mr. W. D. Sloane, of Lenox. In December, 1894, this herd comprised the following animals: Mature milch cows, 22; mature bull, 1; young bull, 1; young stock (heifers ranging from six months to two years old), 11; total, 35. On Christmas Day, December 25, 1894, the twenty-two milch cows were submitted to the tuberculin test, and the temperature chart of the reactions obtained is herewith subjoined.

Chart of Milch Cows.

Herd Nos.					
42	102	102.6	102	101.8	
*30	102.6	106.6	107.4		
34	102.125	102.4	102.4	102.4	102.2
*45	101.4	105.8	104.2	105.4	
*40	101.5	102.6	104.6	106	
*28	100.8	103.2	103.2	104.8	
*14	101	103	105		

Herd Nos.	*Chart of Milch Cows.—Continued.*				
44	101	102.6	101.8	101	100.8
39	101.25	101.4	101.4	101.6	102
* 4	100.8	102.4	102.6	104.6	
*25	101.4	104.2	106.2		
*22	101.25	104.2	106	106.2	
* 7	100.6	102.4	103.6	105.4	
*43	102.75	103.4	103.8	105.6	
19	100.6	102.4	102.6	102.8	102
*21	101	106.2	106.6		
*38	101.4	104.4	106.4	107	
17	101.6	103	102.8	101	101.6
37	101.2	102	101.8	101	
48	101.5	103.4	104.8	101	101
49	102	103	102.6	101	
*36	100.4	105	106.6	105.8	

The reagent used was the Tuberculinum Kochii of Libbertz, the dose used being two minims diluted with one per cent. solution carbolic acid in distilled water. The column of figures to the left of the above chart were the herd numbers of the cows, and these numbers will again be referred to further on in the report.

It will be noticed that those animals marked with a *, thirteen in all, gave decided reactions. Please note also that the diseased animals were in clumps or bunches. The worst diseased individuals were found in the centres of these clumps. The animals were condemned by the State authorities and killed. In every instance well marked tuberculosis was present, some of the cases being very bad indeed.

On January 20, 1895, all the young stock and both the bulls were tested, also five of the milch cows were retested, and the following is the charts of the temperatures obtained.

Herd Nos.	*Temperature Charts of Young Stock (heifers).*				
50	101.2	101.2	101	100.8	101.2
51	101	101.2	101	101	101
52	100.8	101.4	101.6	101.2	101.2
53	101	101.4	101	100.8	101
54	101	102	102.4	101.4	101.6
55	101.2	102	102	102.8	101.6
56	100.6	102	101.8	101	101.4
57	101.6	102.6	102.4	101.8	101.6
58	101.6	102	101.4	101.4	101.6
59	101.2	102	101.8	101.2	101.4
60	102.2	101.6	101.6	101.4	101.6

Temperature Charts of Bulls.

Young bull	101.6	102	101.6	101.8	102
Mature bull	101.2	103.4	106.2	106.8	

Temperature Charts of Retested Cows.

Herd Nos.					
44	100.8	101.4	101.6	101.2	100.8
39	101.4	101.2	101.8	101.6	101.2
19	102	102	101.8	101.4	101
17	101	101.2	101.2	101	101.4
48	101	101.6	101.6	101	101

It will be noticed that the only animal to react was the mature bull. He was condemned and killed. The lesions found were quite extensive, and, in my opinion, were of at least two years' standing.

We had thus slaughtered thirteen out of twenty-two milch cows and one bull, making fourteen out of a herd of thirty-five head.

All of the heifers were sired by the diseased bull, which must have been diseased at time of service. The dams of these heifers are shown by the following chart, and by reference to the first temperature chart it will be seen that seven of these healthy heifers were born of diseased dams.

Chart Showing Dams of Heifers.

Dam of Heifer	No. 50	was cow	No.* 7	(Tuberculous).
" "	No. 51	" "	No.* 21	(Tuberculous).
" "	No. 52	" "	No.* 25	(Tuberculous).
" "	No. 53	"	disposed of previous to test.	
" "	No. 54	" "	No.* 28	(Tuberculous).
" "	No. 55	" "	No.* 30	(Tuberculous).
" "	No. 56	" "	No.* 21	(Tuberculous).
" "	No. 57	" "	No. 19	(Healthy).
" "	No. 58	"	disposed of previous to test.	
" "	No. 59	" "	No. 37	(Healthy).
" "	No. 60	" "	No.* 14	(Tuberculous).

Mr. William Griffin (manager for Mr. Sloane) being anxious to make the work as thorough as possible, gave me *carte blanche* to kill any of the remaining animals which I might think looked in any way suspicious of being diseased. Acting on this, we slaughtered the milch cows Nos. 17, 19 and 39. The two latter, Nos. 19 and 39, were found entirely clean and healthy in every way. In No. 17, on the other hand, we found

a bronchial lymphatic gland enlarged to the size of a duck's egg, and containing glairy liquid pus. There was an absence of the cheesy matter usually associated with tuberculosis and the walls of the pus cavity were thinner than we usually see in lymphatic glands undergoing tubercular suppuration.

It here devolves to say a few words on the arrangement of the stable where these animals were kept and on the steps taken to cleanse and disinfect it. While all the animals were kept under one roof, yet the building can best be described as consisting of two parts. That part in which the milch cows were kept measures 30 x 60 feet and the ceiling is 10½ feet high. The floor is of brick set on edge in cement. The windows, twelve in number, face east and west; they measure 3½ x 2½ feet and are placed within two feet of the ceiling. There are two ventilators, each three feet square. The ceiling is of narrow pine boards planed and varnished and the lining of the walls is of the same material. The stable is arranged for twenty-six cows, the animals standing in two rows facing each other with walks between them and behind them about five feet wide.

The young stock were for the most part kept in box-stalls, arranged in two rows and communicating with the cow stable by a five-foot passage way. While under the same roof they were, with the exception of the passage way, isolated from the part in which the cows were kept, and, although reared on their milk, never came in direct contact with them.

Cleansing and Disinfection.

All the remaining stock having been removed, cleansing and disinfection was proceeded with as follows:

(1) Dry brushing of the whole interior of the building.

(2) Scrubbing the entire interior with soap and hot water *ad libitum*.

(3) Saturation of the entire interior with an antiseptic wash made up in strength and of ingredients as follows: Bichloride of mercury, one ounce; glacial carbolic acid, twelve ounces; hot water (scalding), twelve gallons. This was applied copiously and forcibly with large garden syringes.

(4) The doors and windows being shut tight, the atmosphere was saturated with the fumes of burning sulphur for a period of two nights and one day.

(5) The doors and windows were then thrown open to the light and air and left so for a week.

(6) The place was dried, the entire woodwork sandpapered and submitted to two coats of hard varnish.

(7) And to all this I would say the work was done religiously and well.

In the bull pen there was an extra lining of heavy rough boards. These were removed and burned, but apart from this none of the woodwork was either removed or destroyed. In order to avoid danger of poisoning from the bichloride of mercury solution, the mangers were again washed out with simple warm water.

The animals were then taken back into the stable and the herd replenished with tested cows from the farm of Mr. W. K. Vanderbilt on Long Island. Since then the herd has been self-sustaining. The original young stock have, as they developed, been introduced into the dairy, and other young stock have been born and grown up to take their proper place among the milch cows, but during all these years, no symptoms or evidences of tuberculosis have developed or been found either among the original or among the introduced stock. This negative evidence must be admitted as of some value, but apart from it we have as the years went past been able to accumulate a large amount of positive evidence which is of much greater value as a proof that the herd is free from disease. Thus during the last three years several of the cows have been killed for beef, and inspection at time of slaughter failed to reveal any of the lesions of tuberculosis. In the month of September, 1897, seven of the milch cows died from or were killed on account of poisoning with white lead. In all these cases a careful post-mortem examination for the lesions of tuberculosis was conducted, but no lesions were discovered. The following table shows the animals that have been killed or have died :

Table Showing Disposal of the Balance of the Original Herd up to the Present Time.

Mature Cows.

No. 42—Still in herd.
No. 34—Killed for beef, healthy.
No. 44—Not in herd, no record of what became of her.
No. 37—Still in herd.
No. 48—Killed for beef, healthy.
No. 49—Sold to W. W. Law of New York.

Heifers.

No. 50—Still in herd.
No. 51—Died of lead poisoning Sept., 1897, not tuberculous.
No. 52—Killed for beef, healthy.
No. 53—Killed for beef, healthy.
No. 54—Died of lead poisoning Sept., 1897, not tuberculous.
No. 55—Died of lead poisoning Sept., 1897, not tuberculous.
No. 56—Still in herd.
No. 57—Still in herd.
No. 58—Still in herd.
No. 59—Still in herd.
No. 60—Still in herd.
No. 61—Sold, no record of what became of her.
Nos. 51, 52, 54 and 55 were born of diseased mothers.

The second case I wish to point out was on a much smaller scale and will not take so long to relate.

In June, 1894, Dr. Henry Colt, of Pittsfield, had six cows and a six-months-old calf. The tuberculin test was applied and all of the cows reacted, the calf alone failing to do so. The cows were condemned and killed. Two of them proved to be unusually bad cases ; one of these, a Jersey, was a mother of the six-months-old calf and was also pregnant at the time of slaughter.

The stanchions were removed and the floor, which was old, torn up and destroyed. The urine-soaked earth was dug up and removed. The interior was then brushed, washed and treated with the antiseptic wash previously mentioned. The ceiling and walls being of rough unplaned wood, were heavily washed with hot whitewash. The stable was left vacant and open to the sun and the air until the fall, when a new floor was put in and the stanchions, which had been washed and left out of doors all summer, were put back in place. The calf was taken back into the stable and has spent her winters

there ever since. She is now a nice plump four-year-old cow and on January 12th of this year was tested with tuberculin without giving any reaction.

This stable, arranged for five cows, measured 15½ x 14½ feet; ceiling 7½ feet, two windows, one north and one south, one ventilator one foot square; average cubic space per cow approximately 337 cubic feet.

Reviewing the history of these two cases we are confronted with a number of pregnant facts. Taking the Sloane herd these facts are :

1st. That by the aid of tuberculin fourteen diseased animals were eliminated from a herd of thirty-five.

2d. That eleven heifers and one young bull were all sired by a diseased bull.

3d. That of these eleven heifers seven were born of diseased mothers.

4th. That all of them were reared on milk most of which was drawn from diseased cows.

5th. That they never came in direct contact with the diseased animals.

6th. That notwithstanding the facts that all were sired by a diseased bull, that seven of them were born of tuberculous mothers, that all of them were reared on milk from tuberculous cows, and that all of them have been kept in a stable which was previously the home of thirteen diseased cows, that notwithstanding these facts we find at the end of four years that at least five of these eleven animals are absolutely free from tuberculosis and that in every human probability all of them that now remain alive are likewise free from this disease.

7th. Of the cows introduced from Long Island and placed in this previously infected place some have died and been found healthy and according to every appearance, and in accordance with every analogy, these that remain are likewise free from disease.

The lessons to be derived from the herd of Dr. Colt point exactly the same conclusions, and yet here we must recognize a very material and important difference. In the case of Mr.

Sloane, his stable was large, airy, well lighted, ventilated, had a water-tight floor, readily lent itself to cleansing and disinfection and was altogether from a sanitary standpoint well arranged.

The stable of Dr. Colt, on the other hand, was the very reverse of this. It was small, had insufficient cubic space, but little ventilation, no proper drainage, had pervious urine-soaked floors, was finished in rough timber, and from a sanitary point of view was badly arranged. Taken on the whole, it is not too much to say that it was considerably worse than the average Massachusetts cow stable. And, yet, in spite of all this and the fact that it was a badly infected stable, the evidence is that the means of disinfection were adequate and that the infection of tuberculosis was completely eradicated.

Reviewing the two cases as a whole, the immense preponderance of evidence is in favor of these conclusions.

That, by the judicious use of tuberculin, tuberculosis can be eradicated from a herd of cows.

That tuberculosis is not an hereditary disease.

That so far as calves are concerned the danger to them from the use of milk from tuberculous cows must necessarily be very slight.

And that, given an infected building, it is possible, at comparatively little cost, to make it entirely free from infection and a safe place in which to keep stock so far as the disease tuberculosis is concerned.

PARTURIENT APOPLEXY.

By J. S Lamkin, D. V. S., Yonkers, N. Y.

A Paper read before the Veterinary Medical Association of New York County, May 4, 1898.

Wm. A. Mowry said that "there's no lamp by which our feet may be guided but the lamp of experience"; but, although I have had some little experience with the disease in question, I do not feel at all competent to attempt to be a "guide unto

your feet and a lamp unto your path." The etiology of parturient apoplexy has called forth a variety of opinions from different authorities who have given the subject particular care and observation. Some consider it due to a specific element in the blood ; some to an accumulation of milk-producing elements in the blood, giving rise to fever and blood poisoning ; to an overloading of the system with blood, causing nervous disorders. Others, notably Professors Williams and Barlow, considered it a disorder of the sympathetic nervous system, while still a few others consider it due to a germ which is very tenacious of life, and may, like anthrax, be carried long distances in the hay or grain grown on infected soil.

While I am not able to give any irrefutable reason for "the faith that is within me," nor explain the workings of the effect of the cause to which I attribute the disorder, I feel that parturient apoplexy is caused by an enriched condition of the blood due to too high feeding, without sufficient exercise for some weeks prior to parturition ; and that in some inexplicable manner, this fullness of the system acting on the nervous system causes the phenomena presented in the disease. It is seen more often in finely-bred cows than among common mixed breeds under similar conditions. And in my experience, at least, is never seen in thin, poorly-fed animals, nor among cows that are out of doors all of the time and are fed but little grain.

In the West, where I was somewhat extensively engaged in cattle-raising some years ago, where thousands of cows are giving birth to their young every spring and summer, I never saw a case, although many of them were very fat at the time of parturition. I attribute this immunity entirely to light grain rations, when fed grain at all, and plenty of exercise. Even among ordinary farmers' cows of this and adjoining States, the disease is very rarely seen ; but wherever cows are highly fed up to, or near parturition, especially if they be finely-bred animals, the disorder is often present.

Like azoturia in the horse, it seems to arise from too much rich albuminous food, which under an exciting cause, not per-

fectly understood, generates a poison which produces the disease. Like azoturia, too, it is very rapid in its inception, the offspring showing no sign whatever of any disturbance previous to birth, while the mother may within ten or twelve hours afterwards, in quick cases, be down and unconscious.

The symptoms of parturient apoplexy are too well known to need any lengthy description here. There is generally a slight restlessness, with occasionally abdominal pains; stoppage of the secretions, then weakness of the posterior extremities, then paralysis, more or less marked and general. Extreme restlessness by this time, with great pain in the head, due to a congestion of the brain, deglutition and micturation difficult, if not impossible, then coma and death, unless a change for the better occurs.

My treatment of this disease has changed considerably of late, and I find myself more successful than formerly.

I have never bled any of my cases—so cannot say how it would act; but bleeding would seem to be indicated many times. Nor do I now give a "large cathartic dose," as is generally advised in our text-books on the subject. The secretions have stopped or nearly so, as I have said, and it seems to me unnecessary to pour a quantity of medicines into the stomach to lie there and perhaps be changed in their action by fermentation and other changes going on there.

If tympany is present, as is sometimes the case, calcium sulphate I have found is the best remedy, shaken up with some little force through a canula into the rumen. Three or four ounces in as many quarts of tepid water, is my rule. To relieve the congestion of the brain and spinal cord, which is undoubtedly present, I use either cracked ice or ice-water, generally the latter, as it can be kept in place better if the animal is uneasy. Bind two large sponges upon her head and cover the body with warm blankets, and at least every half hour pour ice water into the sponges and squeeze a strip of woolen blanket out of the ice water and lay along the back and keep well covered with the blankets. Prop the animal up into as near a sitting posture as

possible, and keep her well bedded. It is one man's work to attend to her for the first few hours. Draw her water if she is not passing it and give frequent enemas of warm soapy water.

As to medicinal agents, I generally confine myself to two or three—aconite and nux vomica or strychnia and digitalis; but if the animal is very uneasy, I give chloral hydrate and bromide of potash, in six-dram doses each, as seems necessary. Two drams tinct. of aconite in same quantity of cold water every half hour upon the tongue and one grain sulphate of strychnia hypodermically every two hours, until there is a change for the better, is my rule. Aconite is called "the therapeutical lancet" and is certainly indicated in this disorder. If the heart is weak or unsteady, I give ten minims of fluid extract digitalis with the aconite. If not practicable to give the strychnia hypodermically, two drams tinc. nux vomica, given also with the aconite, may be substituted. Alcoholic stimulants come in as soon as there is a change for the better, but until the secretions are aroused somewhat not much can be expected of them. As soon as the animal begins to want to rise, a pint of raw linseed oil and four to six ounces of tinc. of aloes may be given. The enemas should be continued until the bowels operate naturally. Frequent milking is necessary, even if very little is obtained. In the administration of medicines, the greatest care should be exercised or some of it will pass into the trachea and thus into the lungs. Even if the animal seems perfectly sensible and can swallow somewhat, deglutition is often imperfect and I have found it a safe rule to use a piece of half-inch rubber hose to give all medicines, excepting the small quantities of aconite and nux vomica, until she can drink from a pail and even then they should be turned down very slowly. In the AMERICAN VETERINARY REVIEW of December, 1894, is an article by Dr. R. H. Harrison, of Atchison, Kansas, recommending a new method of treating this disease, which consists of one introduction of a pint of water at 100° F., containing ten grains common salt, into the jugular vein, in the upper third of the neck. This is to be done with a Dieulafay's aspirator to be had of Codman & Shurtleff,

of Boston, Mass. Dr. Harrison reports eighty per cent. of cures by this method, which would indeed be very gratifying. I have often thought of trying it, but have neglected sending for the instrument. If any one does do so, I hope he will report results.

The prognosis of parturient apoplexy must of necessity be very grave, before one can tell how his case is going. Even after the patient rallies from the first attack and is up and eating a little, she may relapse and die. My system of prophylaxis is, if in summer or when the animal is out to grass, to feed her nothing whatever for six weeks prior to calving and if to be kept up give only hay and three quarts of bran, wet up soft, night and morning for same length of time. Keep salt where she can lick it at will and keep her out of doors all of every day unless stormy. That "it is better to seek health in the fields unbought than to fee the doctor for a nauseous draught" applies well to the prevention of "parturient apoplexy" and even then, especially in winter, if the animal is fat, a pound of Epsom salts dissolved and given as one dose about a week before calving, will often avert this very serious trouble.

Now, I am sure that some of you gentlemen present know more about this subject than I do, and I would be very much pleased to hear your suggestions. That "we are never too old to learn" we all, I think, find out occasionally, and I would be glad indeed to hear the experience of others and get some points for future use.

I thank you, gentlemen, for your kind attention.

SUPPURATIVE CELLULITIS IN THE LIMBS OF CATTLE DUE TO STREPTOCOCCUS INFECTION.

By Veranus A. Moore, M. D.

Professor of Comparative Pathology and Bacteriology, New York State Veterinary College, Cornell University, Ithaca, N. Y.

In August, 1897, my attention was called to an interesting disease affecting the feet and lower limbs of cattle in certain parts of Herkimer County. The affection had received the local

designation of "foot rot," and, on account of its apparent contagiousness, it was viewed with much apprehension by the cattle owners of that vicinity. It was found, however, that it had not spread over a very large territory, but that several dairy herds had suffered quite severely. Unfortunately, it was not reported to us until the height of the trouble had passed, so that this article is based upon the examination of a few animals suffering from the naturally-contracted disease and upon the cases experimentally produced.

The manifestations of the disease were, within certain limits, uniform in all of the affected animals. Usually but one foot or leg was attacked, although there were numerous exceptions. The first symptom noticed was a swelling, which usually appeared in the lower part of the leg, most often in the pastern. In some animals it was said that the swelling was restricted to a small area, but often it extended up the leg to and even above the knee or the hock joint. There was evidence of pain and the animal became very lame. As the inflammatory process continued, the subcutaneous tissue became indurated, the skin thick and dry and eventually it would crack, usually, but not always, below the dew claws, and a thick creamy pus would be discharged. After discharging, the swelling subsided and the normal condition was rapidly restored. The extent of the swelling and the time necessary for the suppurative process and recovery varied in different animals, but as a rule from ten to fifteen days were required. The exceptions were largely in those cases where the inflammatory process extended down to the coronary cushion. In these there was more or less sloughing of the hoof, and it was in these cases that the disease appeared in its most serious form. So far as I learned all of the animals eventually recovered. A personal examination was made of five cases, which were in two herds on adjoining farms.

Case No. 1. A cow, 7 to 8 years old. The trouble was in the right hind foot. She had recovered from a severe attack in the right fore foot. There was still some swelling in the hind leg and the skin and subcutaneous tissue above the heel were much thickened. There were two cracks below the dew claws, from which, the owner of the animal said,

there had been a profuse discharge. At this time pus could not be obtained. Several small pieces of the infiltrated tissue were secured. From some of these agar tubes were inoculated at the time and the others were placed in sterile tubes and brought to the laboratory for further examination.

Case No. 2. This was in a cow, about six years old, in the same dairy. The left fore leg was just beginning to swell. There was evidence of pain and the skin from the hoof to the knee was sensitive to the touch. The temperature was normal, but there was indifference to food. This case was treated locally by Dr. Law, with recovery without suppuration.

Case No. 3. (Cases 3 to 5 were in the second herd.) This was in a cow, seven years old. The right hind leg was affected. The disease had already run about three weeks and for several days the animal had been under the care of a veterinarian. The cellulitis had extended up the leg to and above the hock joint and down to and over the coronary cushion. The hoof covering the heel had cracked and part of it had been removed. There was a large subcutaneous abscess above the heel, which was discharging through an opening or crack in the hoof near the middle of the bottom of the foot. It was stated that at first the pus was thick and of a cream color, but at this time it was thin and of a dirty brown tint. By means of pressure a considerable quantity of it was forced out, from which tubes of agar were inoculated and a few cubic centimeters placed in a sterile tube and brought to the laboratory.

Case No. 4. This was in a two-year-old heifer. The left hind foot was attacked. The leg was slightly swollen. There was distinct fluctuation over an area about 3 cm. in diameter, on the front of the foot and just above the hoof. The animal seemed to be well otherwise. Temperature normal and appetite good. The hair was clipped, the foot carefully washed and disinfected and the abscess opened. It contained about 5 c.c. of a thick creamy looking pus. Several tubes of agar were inoculated from this and the balance placed in sterile tubes for further examination.

Case No. 5. This was in a two-year-old heifer. The left hind foot had been affected, but at this time it had discharged, the swelling had subsided, and the abscess was practically healed.

The disease in Cases Nos. 3 and 4 seemed to resemble Panaritium,* the essential difference being in the extent of the inflammatory process. Until the specific cause of that affection is more definitely determined, and the extent of the lesions in-

* Möller. Speciellen Chirurgie, S. 849.

cluded within the possibilities of its etiological factor more clearly defined, the question of its identity or non-identity with the local infections here described cannot be answered. In both the disease seems to be due to local causes.

Bacteriological Examination.—As already stated, several agar cultures were made at the time of the examinations from the pus or indurated tissue from three of the cases. On the following day bouillon and agar tubes were inoculated and gelatin and agar plate cultures were made. In addition to these several cultures were made on special media from the material obtained in sterile tubes. Without entering into wearisome details, the results of these cultivations from the different animals may be summarized as follows:

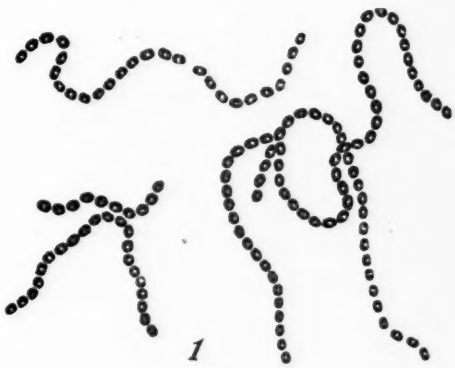
From Case No. 1.—A streptococcus and an undetermined micrococcus and bacillus.

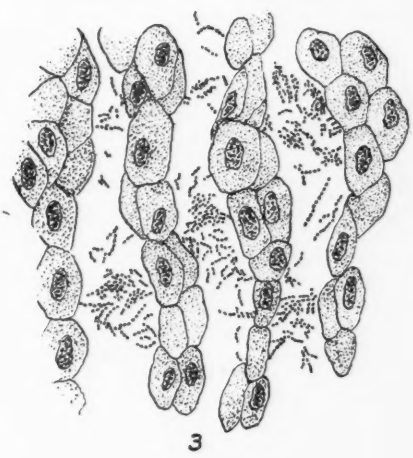
From Case No. 3.—A streptococcus and several (about six) forms of chromogenic micrococci and bacilli. (The foot in this case had been wrapped for several days in oakum wet with some disinfectant.)

From Case No. 4.—A streptococcus which appeared in pure culture in most of the tubes. In three tubes *bacillus coli communis* was also present.

In the plate cultures in agar made from the material from cases Nos. 1 and 4 colonies of the streptococcus predominated. In those prepared from case No. 3 colonies of chromogenic micrococci were more numerous.

The culture of the colon-bacillus was carefully studied in both its cultural characters and its effect upon animals, but it did not reveal any properties uncommon to that species. This, together with the fact that it appeared in the cultures from but one case, suggests that its presence was accidental and that it did not stand in any etiological relation to the inflammatory process. With the exception of the streptococcus, all of the other bacteria which appeared in the culture were common saprophytes which presumably had found their way into the open sores.





Description of Plate.

Fig. 1. A drawing of streptococci made from a cover-glass preparation from a fresh bouillon culture stained with alkaline methylene blue. Magnified about 1500 diameters.

Fig. 2. A drawing from a cover-glass preparation from the liver of a rabbit dead from inoculation with the streptococcus stained with alkaline methylene blue. Magnified about 1000 diameters.

Fig. 3. A drawing from a section of the liver of a rabbit dead from the inoculation with the streptococcus. (Same rabbit from which drawing Fig. 2 was made.) Sections cut by the paraffin method and stained with carbol fuchsin. It shows the *blood spaces* to contain a large number of streptococci. Magnified about 500 diameters.

The microscopic examination of cover-glass preparations from the pus taken from case No. 4 showed a streptococcus in short and long chains. In those made from the material from cases Nos. 1 and 3 there were in addition to the streptococcus several other forms of bacteria. The infiltrated subcutaneous tissue from case No. 1 was found to consist of round cell infiltration. The fresh preparations of the pus from the other cases (Nos. 3 and 4) revealed nothing unusual for purulent material.

Inoculation into Cattle.—In order to determine the infectious nature of the trouble, two cows were inoculated with the material obtained from cases Nos. 3 and 4. A small portion of the pus from each specimen was diluted in sterile bouillon and about 2 c.c. of the suspension injected subcutaneously just above the hoof in the left fore foot in each case. Swelling was noticed on the third day. It gradually extended up the leg to the knee joint. There was much tenderness and evidence of pain. The subcutis became indurated in the lower part of the leg and on the 10th and 12th days suppuration was evident. The abscesses were not opened, but a few days later they broke just under the dew-claws, near the place of inoculation, and discharged a considerable quantity of cream-colored pus, after which complete recovery soon followed. The streptococcus was obtained in pure culture from each of these cases.

A third cow was inoculated with a pure bouillon culture 24 hours old of the streptococcus obtained from case No. 4. The inoculation was made by scraping the skin on the right fore foot just above the hoof, and after removing the epidermis the culture was rubbed on the raw surface. Swelling began in three days and the symptoms already described followed in regular order. A subcutaneous abscess formed and on the 14th day it discharged. The streptococcus was obtained in pure cultures from the freshly discharged abscess. Recovery rapidly followed.

A cow was inoculated in the tail with a pure culture of the streptococcus with negative results.

The Streptococcus.—The cultures of streptococcus isolated from the different animals (cases Nos. 1, 3 and 4) were care-

fully compared in parallel cultures and found, so far as this method enabled one to determine, to be identical. The organism was a true streptococcus. Morphologically it grew in long chains in bouillon and agar. It stained readily with aniline dyes, but it did not retain all of its color when treated after Gram's method. Each coccus or segment seemed to be distinct. Many of them gave a decided polar stain, although this was not uniformly the case. In sections of the liver of inoculated rabbits it appeared in the blood spaces in large numbers and in long chains, but in cover-glass preparations they seemed to be quite broken up into shorter chains, diplococci and single micrococci.

In bouillon it grew in clumps or grayish masses, which settled to the bottom or sides of the tube if they were inclined. After several generations a more uniform cloudiness was imparted to the bouillon. Milk was not changed in appearance.

On agar the isolated colonies were about 1.5 mm. in diameter with a convex brownish centre surrounded by a thin spreading growth. It did not grow on potato and very feebly on gelatin. In alkaline bouillon containing 1 per cent. of the sugars ordinarily used (dextrose, saccharose and lactose) the reaction became strongly acid, but gas was not formed.* The streptococci were soon destroyed in the acids formed in these cultures. In the fermentation tube the growth was quite vigorous in the open bulb, but exceedingly feeble in the closed branch.

This organism was very sensitive to the action of disinfectants and it possessed a low thermal death point, an exposure to moist heat at a temperature of 55° C. for 5 minutes destroyed it. (These tests were not repeated.)

In rabbits it produced a rapidly fatal septicæmia, destroying life in from 36 to 48 hours. Guinea-pigs were not affected unless large doses were injected into the peritoneal cavity. Unfortunately, this streptococcus stopped growing very suddenly be-

* In this respect it conforms with the action of all the streptococci with which I am familiar. This power of the streptococci to break up the sugars forming acids without gas seems to be of value in differentiating doubtful streptococci from certain micrococci which often appear in short or longer chains.

fore I had extended its study sufficiently to positively identify it, and before the first results with disinfectants and the thermal death point had been verified. It agrees very closely with the description of *streptococcus pyogenes bovis Lucet** with the exception that it is more virulent for experimental animals. This, however, cannot be considered of very much importance. Further, I have not been able to find distinctive characters or properties to differentiate it from *streptococcus pyogenes*. Additional investigations will be necessary to show that the streptococci producing suppuration in cattle and in man are separated by specific or veriatal differences.

Source of Infection.—Although this disease appeared to be of much importance in its beginning its early disappearance quieted the fear that the locality was invaded with a "contagious foot rot" and attention was directed to an inquiry into the source and manner of infection. Concerning this positive information was not secured. However, a few important conditions affecting the immediate environment of the animals were found to have been so closely associated with the trouble that they are quite suggestive. The cattle in the herds where the disease appeared were driven a considerable distance morning and evening through paths which were very muddy. As would be expected, the mud was heavily laden with fecal and decomposing vegetable matter. It was thickly sprinkled with stone of a flat, sharp, angular variety. It is presumable that the animals in wading through these places scratched their feet or legs slightly but enough to cause the infection of the organism which it is assumed was in the top soil. It was a noteworthy observation that the disease begun with a "rainy spell," and consequently muddy paths and yards, and disappeared after the mud dried up. Previous investigations† have shown that delicate streptococci are sometimes present in the soil. The numerous recorded observations on this group of bacteria show that streptococci are not only widely distributed in nature, but also

* Annales de L'Institut Pasteur, VII (1893), p. 324.

† Bulletins No. 3 Bureau of Animal Industry, U. S. Department of Agriculture, 1893.

that they are frequently associated apparently as the etiological factor in various morbid processes. Their presence in inflammatory lesions leading to suppuration is quite noticeable.

The number of bacteria which have been found associated with suppuration in the bovine species is already quite large, but as yet streptococci seem to be the organisms most frequently encountered. Lucet (l. c.) has reported 52 cases of abscess in cattle which were examined bacteriologically. A list of the organisms isolated from these cases is appended.

Streptococcus pyogenes bovis.	in 9 cases.
Staphylococcus pyogenes bovis	in 2 cases.
Bacillus pyogenes bovis.	in 6 cases.
Bacillus liquefaciens pyogenes bovis	in 4 cases.
Bacillus crassus pyogenes bovis	in 1 case.
Streptococcus and staphylococcus	in 3 cases.
Streptococcus and B. pyogenes	in 4 cases.
Streptococcus and B. crassus	in 2 cases.
Streptococcus, staphylococcus and B. crassus. . . .	in 1 case.
Bacillus pyogenes and bacillus crassus	in 1 case.
Bacillus pyogenes and bacillus liquefaciens.	in 2 cases.
One or the other of the above mentioned organisms	
with an undetermined species	in 14 cases.
with staphylococcus pyogenes albus of man . .	in 1 case.
with staphylococcus pyogenes aureus of man. .	in 2 cases.

It seems from the present knowledge concerning the causes of suppuration in cattle that the importance of streptococci can not be questioned. This is of interest, as cattle are not especially susceptible to bacterial infection nor are the streptococci the most hardy of pyogenic organisms. It remains for future investigations to determine whether the various streptococci found in these lesions belong to a single species and if so to find in what respects it differs from *streptococcus pyogenes*. Unfortunately, Lucet does not point out the distinguishing features which led him to separate the pyogenic organisms found in cattle from those which had already been described from similar lesions in other animals and in man.

INTERESTING CASES

FROM THE SURGICAL AND OBSTETRIC CLINIC, NEW YORK STATE VETERINARY COLLEGE.

By W. L. Williams, Prof. of Surgery, etc.

TREATMENT OF FRACTURES IN BIRDS BY RUBBER ADHESIVE PLASTER.

(962) Patient, a white Leghorn hen, æt. 1 year, had in some unknown manner received a complete simple fracture of the metatarsus at the commencement of the lower third. Displacement and mobility were well marked and prohibited the bearing of any weight upon the affected member.

The materials generally applied for the fixation of fractures being too bulky and heavy for so small a patient, recourse was had to the commercial rubber adhesive plaster. A strip of plaster ½ inch wide was gently warmed and applied directly to the foot for a sufficient distance on either side of the fracture, in the form of a spiral bandage, each turn overlapping the preceding.

The plaster secured complete and permanent fixation, was easily and quickly applied, highly presentable in appearance, and gave the greatest possible comfort and ease of movement to the patient. The hen began using the leg naturally after a few hours, and although permitted the freedom of the poultry yard regardless of moisture, the bandage remained securely *in situ* until after the fracture had reunited.

AMPUTATION OF THE POSTERIOR LEG OF A SOW.

(583) Patient, a sow of common breed, had four weeks previously given birth to eight pigs, which she was still suckling. A few hours before being presented at the clinic she had been attacked by a bulldog and the right tarsus severely mangled, the bones of the tarsus being separated from each other and from the tibia, fibula and metatarsals, the foot being held to the leg chiefly by the posterior tendons and ligaments, the wounds being thoroughly befouled with dirt.

Other treatment than amputation was evidently useless, and accordingly the patient was chloroformed, the limb disinfected, and owing to serious mangling in the inferior tibial region amputation was made by student K. just beneath the head of the tibia. Two lateral flaps were prepared, the chief arteries ligated, the tibia and fibula were sawed through, the flaps sutured carefully, the patient was reloaded into a wagon and returned at once to the owner's premises and placed with her pigs.

On the following day the patient appeared dull, but the wound looked clean, was free from swelling and no injury had occurred to cause hæmorrhage.

On the fourth day the owner reported slight swelling of the stump and the tearing out of one or two sutures, but the patient was brighter, feeding and caring for her pigs, and was moving about some.

On the eighth day the patient was running about on three legs without apparent great inconvenience, and in 15 days the wound was practically healed, the sow in good health and flesh and caring for her brood of pigs apparently none the worse for the injury and loss of a leg.

CASTRATION OF CRYPTORCHIAL BOARS.

(420) Patient, a boar pig, æt. 4 weeks, both testes retained within the peritoneal cavity. Securing the pig on the right side with anterior part of body depressed, an opening was made by student F. in the left flank as if for spaying, the index finger introduced and the left testis grasped, withdrawn from the abdomen and excised, the finger again introduced, passing between the abdomnial floor and intestinal mass until the right testis was encountered and removed in the same manner as the left.

(421) A boar pig of same age as 420, monorchid, the normal testis having been removed by the owner. The abdominal testis was removed by student M. in same manner as 420.

(432) A four weeks boar pig with right testis retained in abdomen, operated upon by student H. in same manner as preceding.

(171) A Chester white boar, æt. about 8 months and weighing about 200 pounds, both testes entirely retained within abdomen. Operation through left flank, the size of patient requiring the introduction of the entire hand into the abdomen in order to reach the right testis. Both testes were normal in size but soft and flabby. All four were castrated without anæsthesia, the abdominal incision was closed by skin sutures only, usual antiseptic precautions were observed and all recovered promptly without incident.

HYDROPS AMNII IN A COW.

(556) Occurring almost solely in the cow hydrops amnii presents an interesting problem in etiology, being so far without explanation.

The patient in question was a Holstein cow of medium size, 7 months pregnant, and had apparently gone well until 14 days prior to examination the owner noted unusual distension of the abdomen and was led to suspect twin pregnancy. She had not been grained but had plenty of grass and fodder and was in fair condition, and believing twin pregnancy to exist and parturition nearing, the owner began feeding a moderate amount of grain. The abdomen continuing to enlarge the owner became suspicious and gave one pound mag. sulph. without producing any change in the constantly increasing abdominal tension, the patient finally becoming unable to rise without assistance, though when up looked bright and ate and drank normally. Her inability to rise seemed more due to the excessive intra-abdominal weight than to any weakness of the patient.

Being called to examine the patient it required the aid of six men to get her on her feet, when she stood and walked well, though as if overloaded. Percussion and rectal exploration revealed hydrops amnii, and a trocar passed into the amnion through the right flank showed the fluid to be perfectly colorless and odorless, as usually observed in these cases. Twenty gallons of it were allowed to run out through the canula. The os uteri was dilated, the membranes ruptured and the fluid left free to escape, the patient being now left for 24 hours, hoping

there would be sufficient gradual dilatation of os to permit of easy extraction of the fœtus, which was at the date of examination still alive and vigorous in its movements.

On the following day the patient could rise with less assistance and had shown some slight labor pains; the os was moderately dilated, the fœtus dead and emphysematous and required considerable force for its extraction, after which the cow seemed much exhausted. A stimulant was administered, and the patient placed in comfortable quarters. Although much of the amniotic fluid had escaped through the os, a great deal remained, the long continued over distension having apparently produced uterine paralysis.

Three hours after removal of the fœtus the cow died from exhaustion.

The autopsy showed a very thin chorion and uterus, the body of which was practically obliterated, the hydrops having been confined to the two cornua.

This change in relation between uterus and cornua constituted an interesting feature in the case. When dilating the os at the time of the first examination, directly in front of the os, centrally located and perpendicular, was a thin band, the nature of which we failed to determine. The autopsy showed this to be the point of juncture between the two cornua which instead of being located several inches in front of the os intern, as in the non gravid or normal gravid uterus, was in direct contact with the os. The uterus was intact in every part except slight lacerations at the cornual juncture, which, however, were of no significance. There were no notable deviations from the normal observed in any organs, except the large flaccid uterus.

In a herd of 10 dairy cows the owner had lost one previous to the case here recorded, undoubtedly of the same affection and but two days prior to our visit.

The results in this case indicate that the proper method to pursue, is to complete at once the dilatation of the os and evacuation of the uterine contents by physical force, and not leave this to be accomplished by labor pains after rupturing the mem-

branes. Such a plan involves much time, labor, and patience, as the cow's os is so firm that it can not be rapidly nor easily dilated, but the uterine walls having been so over distended lose their power and fail to accomplish the purpose sought, while the flaccidity and fluidity tend to rapid and intense infection, with death of the fœtus and absorption of toxic substances.

Siphoning out the fluid after rupturing the membranes would doubtless aid in relieving the uterus and possibly aid it in contracting upon the fœtus. After the fœtus is properly secured by cords it would seem that the recumbent posture would be best for delivery, facilitating the exit of fluids and also the fœtus from the paralyzed uterus.

ASCITES IN A PREGNANT EWE.

(858.) An aged Shropshire ewe at full term of pregnancy had for some weeks shown a progressive distention of the abdomen and for a few days prior to presentation at the clinic had shown inappetence, debility, and difficulty in progression, owing largely to the immoderate distension of the abdomen. Hydrops amnii was at first diagnosed and an effort made to relieve the difficulty by rupturing the supposedly affected membrane through the os uteri, but the effort proving fruitless the patient was destroyed, and the autopsy showed that the fluid had been intra-peritoneal. The peritoneal fluid was pale, slightly turbid, and contained numerous shred-like masses of dirty grayish lymph floccules.

The intestines, mesentery, omentum, lungs, and liver were thickly infested with the degenerate capsules of the *Œsophagostoma Columbianum*. It would appear that the unusual number of these caseated nodules in the liver were the probable cause of the ascites, as a result of their interference with the hepatic functions.

The differential diagnosis between ascites and hydrops amnii in the pregnant ewe offers peculiar difficulties. The heavy abdominal tunic excludes abdominal taxis, the rectum is too small for safe exploration per anum, and the vagina fails to

offer special facilities. The exploratary trocar might give identical results in either affection, the fœtus in each case would tend to float upward, would generally be alive and vigorous, while percussion would reveal the same dullness in one case as in the other.

We find no record of hydrops amnii in the ewe, yet it is not impossible, as it has been recorded in the goat, though chiefly affecting cows.

The ewe will, in all probability, withstand laparotomy as well as the cow, in which case this one means for positive diagnosis is readily available, when if it proves to be ascites, the fluid can be drained away through the incision, while if hydrops amnii the incision can be closed, the os uteri dilated and artificial delivery brought about.

AMPUTATION OF OVARIES AND GRAVID UTERUS IN A BITCH.

(227) Patient, well-developed Collie bitch, æt. 8 months, procured by the present owner three weeks prior to presentation at the college clinic, was presumably non-pregnant. She had been fasted for 12 hours preparatory to spaying, which was undertaken by student H. by the flank method without anæsthesia. Difficulty was experienced in bringing up the uterus or other parts of the internal genitals and it was soon discovered that the uterus was gravid, requiring strong tension to lift the cornua up and out through the incision, when it was found that each cornu contained four fœtuses, which with their envelopes measured 2½ x 4 inches each, the eight fœtuses in the now exposed cornua representing a mass of near ½ gallon. The round ligaments of the ovaries were ligated with catgut, another ligature being placed about the cervix uteri, the entire mass, ovaries, cornua, uterus, and broad ligament were removed and the flank incision closed by deep sutures. On the following day the patient looked bright, but lay quietly and refused food; on the second day the general appearance was better and appetite fair, the animal taking some milk, and on the third she seemed quite well, moving about freely, had a good appetite and was apparently convalescent. The wound showed slight but unim-

portant infection and the patient was permitted to be removed, after which recovery progressed without incident.

COMPOUND FRACTURE OF METATARSUS IN A DOG.

(133) The patient, an adult Collie, had engaged in a fight with another dog about three weeks prior to presentation, during which compound fractures of the right metatarsals were produced at the lower third, probably by a bite. The owner failing to secure recovery the patient was submitted for examination, and it was found that the fractured ends of the bones moved freely on each other, while they communicated with the exterior by two fistulæ opening on the median side of metatarsus, from which considerable pus was discharging.

The injured member was fixed by means of plaster of Paris bandages, the fistulous openings being marked by a cork, which was later cut out and the fistulæ dressed with solution of carbolic acid, followed by powdered iodoform, the dressing being retained by means of a bandage with equitable pressure. The dressing was repeated once daily for six days, at which date the suppuration had virtually ceased and the patient was discharged, with directions for the continuation of the dressing, and recovery progressed rapidly without further incident.

FEEDING ANIMALS.

By T. Curtis Michener, V. S., Colmar, Pa.

Read at the annual meeting of the Pennsylvania State Veterinary Medical Association, March, 1898.

This subject was selected, not that feeding animals is any especial part of the veterinarian's duties, but quite as important for him to understand as the stockman whom he serves. More than this, his client has the right to expect of him sound counsel upon any of the manifold problems that arise in the healthful and economical feeding of all animals and poultry.

His practiced eye should be quick to detect any deviation from the perfect thrift that marks the animal when at its best, for the purpose for which it is being fed, and be able to pre-

scribe the necessary diet to correct defective conditions instead of giving condition powders. However, they act admirably when given together. The basis of all intelligent and successful feeding is in the recognition of the underlying fact, that the various feeds are composed of the same elements as the bodies they nourish. In other words, vegetation incorporates, from soil and air, the materials that the animal body is about to appropriate. But the proportions are seldom right.

The water, ash, protein, fat and carbohydrates of the various forage plants and cereals, are in widely varying proportions and degrees of digestibility, so that it is possible to starve an animal while giving it all it is able to eat; to greatly curtail the production of milk by a badly balanced ration, or to so diminish force as to render an animal worthless for work. To feed for bare maintenance is one thing, for rapid growth and full development, a better thing; to feed a milk cow, at a loss, an easy thing; to feed a horse, up to his full capacity for work, a grand thing. While pedigree is important, skill in feeding makes the successful breeder. We have different kinds of feeding, scientific feeding, the right materials, in exact proportions, for desired results; good feeding, derived from the experience of one's self and teachings of others; haphazard feeding and ignorant, careless, ruinous, criminal feeding. But our live stock interests, the greatest of any people upon the globe, demand that we understand and practice the business for best results. Science is the lever, experience the hand that applies it, love and admiration for our animals the inspiration and profit accruing the consummation devoutly wished for. The science of feeding is exact, so far as determining the relative proportions of the digestible protein to the carbohydrates and fat, for different purposes, under the same conditions. Animals are kept under such widely different circumstances, as to shelter, ventilation, exercise and work and have formed different habits from influence of environment, making it hard to lay down inflexible rules. The analysis of the different foods at hand, a careful study of the condition, purpose and characteristics of the animal

enables the skillful feeder to acquire exactness and proficiency. I will enumerate the essential principles of the art of feeding, in the order of their importance, but must omit detail, from want of time. As before intimated, feeding is reduced to an exact science and knowledge of the composition of animal bodies, and of the various feeds that are to sustain, make growth, produce milk or wool, repair waste, perform work and lay on fat, must be familiar and by the use of figures, which won't lie, the problem is solved.

The materials must be so selected and combined as to constitute the balanced ration for the purpose. Animals are soon fed and bred into a fat-forming or beef habit, which destroys their adaptability for the dairy or race track. Hens fed exclusively upon fattening foods cease laying. The hogs of our section fail to fill the market demand, too much corn fed, too little exercise, too much lard. The chemical constitution of the feed is the chief factor in giving fineness and hardness of bone and muscular tone and action. Too little attention is paid to the amount of water in the feeds. We see animals being nearly physicked to death upon succulent foods and others badly impaired by constipation caused by hard, dry food. The right condition is maintained by proper combinations of feeds.

Stock needs root, silage, wetted feed or mash. The amount of needed water varies with the purpose of the animal and cannot be supplied by drink alone. The time of cutting, the perfection of the drying or curing process, goes far in determining the palatableness, the digestibility, and the danger of undergoing fermentation in the digestive tract. Kiln-dried finely-ground cereals are the safest and most healthful, mixed with silage or made into a mash with cut fodder or hay. From contact, I know the average farmer and feeder is not educated up to these points. Can he obtain the needed knowledge from his veterinarian? The problem is sometimes difficult because of the limited material at hand and the price of such stuff as would balance up the ration, being so high as to make its use unprofitable. Then the question is, what is *best* under the cir-

cumstances? Having determined this important matter the *quantity* to be fed comes next. Medium or average quantities for different ages, weights and purposes should be known, but individual capacity, natural and acquired, must be found out. Only liberal feeding is profitable. Under and over feeding are mistakes. The varying values of feeds in the manure must not be lost sight of when among the farmers.

It is nice to be a skillful mechanic and construct useful things or to understand the running of machinery, but such are not to be compared to the man who can grow and fatten animals, just right; or to him who can run a herd of dairy cows so as to get all from them that is to be had and avoid indigestion, garget and concomitant dangers and losses. It is done by regularity in watering and feeding, avoiding exposure or sudden changes in diet. Gradually increasing the feed upon new animals until their capacity is determined; then keeping a sharp watch for the first indications of surfeit and withholding untll the keen appetite returns.

The condition of the atmosphere, the temperature, the amount of fresh air entering the stable and the exercise, all influence the appetite and digestion and are taken into account by the practical feeder. Some feeds may analyze well but are not relished well by stock, and individual animals have their likes and dislikes the same as persons, which opens a field for observation and tact.

The addition of salt makes feed more palatable and digestible. A milk cow should consume two ounces per day mixed through the feeds; a work horse one ounce. Cheap sugar and molasses can be profitably used and various condiments. We should not allow the patent feed and medicine man to monopolize these things.

EXTRACT FROM A BUSINESS LETTER.—"Here in Tennessee it [the REVIEW] is about the only means I have of meeting monthly my fellow-veterinarians, as in Tennessee we are few and far between, and the REVIEW is a source of great interest to me. Yours truly, P. D. Bray, Columbia, Tenn."

ADMINISTRATION OF DRUGS BY TRACHEAL INJECTION.

By A. Joly, D. V. S., Waterville, Me.

Read before the Maine Veterinary Medical Association, April 13, 1898.

The administration of drugs by the respiratory passages has been of frequent occurrence. The evaporation of water in which odorant plants have been infused, fumigations have been daily practised in our profession, and with good results, but in 1817, as hazard would have it, two students of the Veterinary School of Lyons made the following experiment: The aforesaid students, in order to kill a horse under their care, injected with a syringe a quantity of "aqua pura" in the trachea. During the experiment, one of the professors, Mr. Gohier, came upon them, and, after asking them what they were doing, told them that he was under the impression that the horse must be suffering badly. They answered that they had already injected eight quarts without seeing any ill effect. Then the professor gave them permission to continue the injection until the horse died, which happened half an hour later. The total amount of water injected had been thirty-two quarts.

Immediately after the horse's death the autopsy was made, with the following results: The lungs were inflated, and were very heavy, though no water came from the lobes. From this examination Mr. Gohier concluded that the respiratory canals were quick absorbents, and consequently that we could therefore administer drugs by that passage. Although Mr. Gohier recommended this *modus operandi*, no more experiments were made until 1828, when Dr. Lelang treated many cases of glanders by injecting a quart of water, having in solution $\frac{1}{24}$ its weight of chloride of sodium. By this treatment he obtained quite a number of ameliorations, but not a single cure.

Forty years later Dr. Perosino, professor at the Veterinary School of Turin, injected into the trachea a number of solutions of nitrate of silver against several cases of chronic bronchitis with complete success. This method was once more

abandoned on account of the danger of tracheotomy, its complication, and also as a question of economy, the horse being put to a long rest, and, lastly, there were other safer methods of treatment.

Dr. Levi continued this method of administration by the means of a hypodermic syringe, adjusted to a trocar, thus preventing tracheotomy. Dr. Levi's experience has shown us that most of the drugs can be administered by the trachea and produce the same effect as though introduced in the digestive passages, with the exception of purgatives, which give no results whatever. Dr. Levi reccommends these injections only in cases where a sudden change of the organism is needed because of the activity of the respiratory mucous membrane due to its large area. This gentleman has obtained quite a number of cures in cases of glanders and farcy by injecting 1½ drachms of iodurated sodium, according to the following directions:

Metallic iodine, 2 parts.
Iodide of potassium, 10 parts.
Distilled water, 100 parts.

Increasing the dose ½ drachm every three days until 5 drachms are given in a day.

Dr. Levi also treated a case of pulmonary emphysema of one year's standing and obtained a cure in two days, with the following injection:

Sulphate of atrophine, 1 centigramme,
Aqua pura, 2 grammes,

twice daily.

He has used with success the following injections against chronic bronchitis:

Essence of turpentine, } āā grammes iij
Sweet oil, }

in one dose daily, during twelve days.

Against typhoid fever, an injection of 1½ drachms of bisulphate of quinine, once daily, brought the cure in seven days.

Quite a number of other cases have been treated by Dr. Levi by this method of administration with success.

As far as my experience is concerned, I have a case of epistaxis to communicate to you, which took me eight hours to

stop. Three years ago I was called to see a horse which was bleeding from one nostril, and had been bleeding for ten hours. I first injected in the nostril cold water, made cold application over the head, administered a dose of acetate of lead, tincture of iron, plugged the nostril with absorbent cotton and perchloride of iron. A few minutes later the blood came from the other nostril. I then practiced tracheotomy and plugged both nostrils. About one half hour later the blood ran out from the tracheotomy tube. I removed the tube, the cotton from the nostrils and went three miles to get some fluid extract of ergot, of which I injected 1 c.c. in the trachea ; the blood continued to drop ; half an hour later I made another injection of 1 c.c. and ten minutes after the hæmorrhage stopped. I waited over an hour, prescribed tonics for two weeks and my patient recovered.

In concluding this paper I will say that the method of administering drugs by the trachea is another means which may in certain cases be advantageous and may render great service to the veterinary profession.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

DID THESE HORSES HAVE CEREBRO-SPINAL MENINGITIS OR HYDROPHOBIA?

By C. C. Crane, V. S., Akron, Ohio.

A contractor in this city owning about thirty horses, also owned a bulldog that acted strangely for two or three days, then seemed to develop hydrophobia. Nothing is positively known that the dog bit any of the horses, but he could have done so. The dog was killed on New Year's morning. Since then three horses have died. First I was called, but being away, another veterinarian diagnosed the case as brain trouble. He did not tell me the temperature nor the pulse, but the man that took care of the horse told me the animal was down most of the time, but would get up when given medicine. The last five hours the horse lived he would snap and bite, but did not die on his

feet. He seemed to be paralyzed. He lived about thirty-eight hours.

On Feb. 3 a second horse was taken sick; did not eat first day, but worked. Occasionally the driver would notice the horse bite at neck-yoke and at other horse. The next morning as the barn boss was feeding the other horse, before coming to the one referred to, it began to show all the symptoms of hydrophobia. I was called early. All the symptoms I could get were a temperature of 103½°, pulse could not get, respiration normal when not excited, but very rapid when I irritated it by making motions in front or by punching sides with an old broom. If standing in front of him, he would spring at you, bite the stall, its front legs and sides, but would not offer to kick at any person or object that passed behind. When water was offered he would plunge his nose into the pail and act as though having spasms; would froth at the mouth, keep ears moving backwards and forwards, but had full control of hind legs; could not swallow food nor water; would stand over, and get up, or obey any command given it, but kept getting more frantic. In the afternoon he was shot; no post-mortem.

On Feb. 10th another horse was taken. Could get close to this one. Temperature 102½, pulse 49, but in half an hour was 64, but during that time about 150 people had come to see the horse. In one hour after, pulse 59, temperature same, pupil of eye dilated very large, having head in dark corner of stall. I lit several matches within six inches of the eye, and held them close to the eye and could not notice any difference in pupil; horse would not move a muscle or seem to care when match was lit; would back up, turn around, go ahead at the command of anyone present, moving ears same as No. 2; could not swallow; in fact, showing all symptoms of No. 2. Was killed in the early morning of the 13th. Before being killed got down and could not get up again. The owner thinking the horse dying, had one of his men hit it in the head with an ax. I took the brain and spinal cord from the last horse and have sent them to Dr. H. M. Bail, State Veterinarian, at Columbus, Ohio.

Now, my opinion of the cases is that the horses suffered from cerebro-spinal meningitis, instead of hydrophobia, as some seem so sure.

WHAT WAS IT?

By W. F. Derr, V. S., Wooster, Ohio.

On December 6, 1897, Dr. M. C. McClain, of Jeanesville,

Ohio, telephoned me to meet him in consultation on a case of a bay mare, Norman breed, 7 years old, that he had been treating for some time, but was receiving no benefit from his treatment.

The history of the case was given by Mr. Otis, the owner. She had done her usual amount of work on the farm during the summer and fall, and being a large and strong animal was kept at work regularly. She did not seem to lose any flesh until late in the fall, when he consulted Dr. McClain about the case, and for which the doctor prescribed tonics, alteratives, etc., for some derangement of the digestive organs. She was kept under this kind of treatment for several weeks, but was found to lose more flesh with all the food she was consuming, which was a fair amount of oats, corn, and some ground food, with good hay; in fact, the owner said she was fed better than while at work. The doctor had also changed his treatment several times, but with no better results; had also, in the meantime, made an examination of the urine, which proved to be normal and to have the normal specific gravity.

At the time of my seeing her she was standing with front feet back and hind feet forward, as if to balance herself, the position of laminitis of the hind feet; her coat looked well and smooth; eating all that was given her, but was greatly emaciated. I made a careful examination of her fæces and urine; the respirations were normal and pulse 80, strong; temperature 103.8°.

Had her taken out of the barn; her walk was weak and somewhat staggering in the hind extremities, but after a few steps to all appearances walked all right. Examination of her fæces proved that the feed was thoroughly digested. As she had been feeding on corn at the time for several days there was but little assimilation of food, and a physical examination absolutely revealed nothing. I, therefore, told the owner that I could not make a diagnosis and that my prognosis was unfavorable; that I thought she would die in a few days. She, however, lived a week, the doctor still giving her some treatment.

Dr. McClain made an autopsy of the case, and says that he made a careful examination, but failed to find anything abnormal; also had the brain and spinal cord examined microscopically, which still failed to reveal the cause of the wasted and emaciated condition.

Probably some of the readers of the REVIEW may give us some light on the case from the history as given above.

FRACTURE OF THE MAXILLA IN A DOG.—METHODS OF SPLINTING.

By FRANCIS ABELE, V. S., Quincy, Mass.

A boy was "knocking flies" with a bat and ball. A greyhound tried to catch the ball on the toss up. He got it, but at the same moment caught the force of the bat on his inferior maxilla. There was a compound transverse fracture with displacement of one ramus. Some hæmorrhage from the mouth. There was inability to bring the jaws into apposition. Traction set the ends in place and at once the dog could move his jaws. applied gutta-percha between the rami on inferior surface of jaw. Under this was a wedge shaped piece of belt leather conforming to inferior outline of the jaw, and fitting up to the neck. Punched holes to carry tape, at ends to go over neck; half way, to go over muzzle, in front of eyes; and just back of canines to go over teeth. Made a strap leather muzzle to go over all. Fed egg and milk with a syringe. Five days later he could open his mouth and lap when muzzle was off. Union had commenced, as evinced by his trying to rub his jaw on the ground, showing the itching feeling. On the tenth day he could eat soups, wanted to yawn whenever muzzle was taken off. Removed splints and kept on only muzzle. There is a clean smooth union of the ends.

A pup six weeks old had displaced fracture of tibia at union of shaft by epiphysis. Bandaged with two small skivings of leather for splints, with silicate of soda. In one week bandage loosened and came off. Pup could use the leg. Put on another, however, but I wanted to show the rapidity of union in so young an animal.

[NOTE.—The above interesting report of fracture of the inferior maxilla reminds me that some years ago a valuable collie was brought to me with the identical history as given Dr. Abele. The difference was that the fracture in this case was longitudinal, extending from the genial surface to between the incisor teeth and rendered compound by the mucous membrane being lacerated from movements of the fractured bone. A neighboring dentist made a rubber cast of the buccal surface and a gutta-percha sling was fitted to the external side, which retained the fractured parts in apposition until union occurred. My experience in this case leads me to the conclusion that only the great intelligence and obedience to his master of this animal rendered a favorable termination possible. Few dogs would permit such a method.—R. R. B.]

THE May issue of the *Journal of Comparative Medicine* was devoted largely to affairs veterinary in New York State, page after page being devoted to pleasant personalities.

EXTRACTS FROM EXCHANGES.

ENGLISH REVIEW.

INCARCERATED (?) SCROTAL HERNIA.—Under this name Mr. E. Morrison relates in the *Veterinary Journal* the case of a four-year-old stallion which presented all the evidences of scrotal hernia: colic, rolling on his back when he was relieved, absence of borborygmus, swelling of the testicular region, on the left side. Rectal examination revealed the strangulated condition of the intestines at the internal abdominal ring. After an anodyne drench, the animal was thrown and the hernia reduced by taxis after some difficulty. A bandage of elastic cotton webbing was placed on the scrotum to remain on for a few days. The animal made a complete recovery, but, notwithstanding the warnings of the surgeon in attendance, the owner having again used the horse for stud purposes, he had a second and aggravated attack of his trouble—the hernia was double. Death arrived twelve hours after the first manifestations. Castration was not performed in the first instance, as the owner objected to it.

MALIGNANT ADENOMA OF THE STOMACH OF A HORSE [*By R. B. Freeman, F. R. C. V. S.*].—This is the case of a hunter, which during a severe attack of laminitis manifested peculiar abdominal symptoms, which made it supposed that there existed some greater trouble, a supposition already expressed on previous occasions by Prof. Williams. The animal grew rapidly worse and was ultimately destroyed. The stomach was examined by Prof. Williams and the diagnosis of gastric complications confirmed, which under the microscope revealed the presence of an adenoid cancer.—(*Vet. Journal.*)

TUMORS IN THE LATERAL VENTRICLES OF A HORSE.—Mr. A. N. Munro, M. R. C. V. S., records this case, which he first was justified in considering as one of stomach staggers, with the ordinary manifestations of brain disturbance (pressing the head against the wall of the stall, attempts to push forward, peculiar carrying of the head, etc.) He relieved his patient with a 7-drachm dose of aloes, and enemas. A week later he had another similar attack, also relieved with the same treatment. A third return of the disease made the attendant diagnose a cerebral tumor; the horse was destroyed. At the post-mortem two symmetrical tumors were found lying over the lateral ventricles; they were pedunculated, oval and about the size of a hen's egg. Microscopic examination revealed that their nature was that

of fibro-psammoma.—(*Vet. Journal.*) [It would be interesting to know if this horse had ever exhibited the ordinary manifestation of difficulty in backing or of immobility, which is frequently present with tumors of the ventricles.—A. L.]

RUPTURE OF THE STOMACH IN THE HORSE.—Can a horse work for several days with the muscular coat of the stomach partially ruptured, is the question asked by Mr. W. G. Dixon, M. R. C. V. S., in the *Veterinary Record*, after relating the case of a horse which, after a day of hard and heavy work, went off his feed and had slight attacks of colic. These passed off and returned for several days and on the ninth day a more severe attack occurred, which carried the patient off. At the post-mortem the stomach was found "ruptured to the extent of about eight inches and to all appearances the muscular coat must have been ruptured for several days."

RUPTURE OF THE FLEXOR PERFORATUS.—Mr. C. Pierce, in the *Record*, tells of the case of a mare which received a kick on the back of the os calcis, midway between its point and the head of the metatarsus, making a small wound and completely severing the tendon of the flexor perforatus. At various times portions of the protruding tendon had to be amputated, until in all seven and a half inches were cut off, as it was very difficult to keep the wound under control. This at last was to a certain extent obtained, in preventing the flexion of the hock. "The hip was setoned and the hock-joint blistered." The hock being thus fixed, as it were, the divided extremities of the tendon became adherent to the surrounding parts, and the superficial exuberant wound treated according to indications. Recovery took four and a half months.

AMPUTATION OF THE PENIS—COMPLICATIONS — RECOVERY.—The case of Mr. C. Pierce, M. R. C. V. S., in the *Veterinary Record*, is certainly interesting, as telling of complications that have occurred after amputation of the penis by the process of inferior incision of the urethra with suture of the reflected tube to the stump. In this gelding, the author, after operating for a case of paraphymosis, had returned his patient in good condition after ten days; he was summoned two weeks later to the same animal, which he found in great pain and unable to urinate. The animal was cast and a fluctuating swelling was found in the sheath—a large abscess, which was freely opened. The catheter could not be introduced, and to relieve the animal, it was necessary to open the urethra under the anus between the two ischial tuberosities. A catheter was passed by

this opening, downwards in the urethra and came out at the cicatrized opening. This was allowed to remain at first, and after a few days only introduced morning and evening; little by little the perineal opening closed, the whole treatment extending over two months.

INJURY TO THE TONGUE [*By M. R. C. Twing*].—The interest of this case brings out two important points, the tendency to rapid recovery of lacerations of the tongue and the great advantage of the use of the tongue-suspensory. A mare had received an injury to the tongue: the tip of the organ was protruding, the frænum torn; a transverse wound, an inch deep, penetrated the muscular part; this wound was about opposite the second molar and severed quite one-third of the muscles. It was necessary to cast and chloroform the animal to attempt the stitching of the wound; and this was so far back that to reach it and bring the tongue out it was necessary to pass a skewer transversely through the organ above the wound and over this a tape. Continuous suture of carbolized string was applied and the tongue placed in a suspensory to keep it back in the mouth. On the second day the animal was permitted to eat a few oats. A small piece of the tongue (the tip) sloughed off on the fifth day, and, as the author said, this might have been avoided if he had applied the suspensory at the first visit he made; this was late in the evening and the animal was so restless and irritable that only an attempt at treatment had been carried out and it was only the next day that proper interference could be applied with the animal cast and chloroformed. —(*Vet. Record.*)

EXAMINATION OF HORSES FOR SOUNDNESS.

HAS THE SELLER REDRESS AGAINST A VETERINARY SURGEON WHO CONDEMNS HIS ANIMAL?—CONTRARY CERTIFICATES DO NOT PROVE AN INTENTION TO DO INJUSTICE, WHICH MUST BE THE BASIS FOR LEGAL ACTION.

The following correspondence was received too late for insertion in the May REVIEW, but we present it in the present issue because the matter has achieved considerable notoriety in the metropolitan district, and also in deference to the wishes of our correspondents. The question raised by Mr. Robbins is one of great importance to veterinarians, and upon which there cannot be two constructions. We are decidedly of the opinion that upon the evidence submitted below he has no cause for action

whatever, as he brings forward no proof that Dr. Ackerman intended to do his horse or himself an injustice or an injury. Proof is lacking that Dr. A. was wrong in his conclusions in regard to the unsoundness of the mare, though the preponderance of evidence is against him. If it were conclusively shown that the mare was sound by the evidence of agreed-upon experts, the question of the *intention* of the examiner to give the buyer an opinion at variance with his honest belief, is still to be proven. An attempt to defraud the seller by the submission of a certificate or opinion different from the convictions of the examiner must be established. No such evidence is produced; but, on the contrary, Dr. Ackerman states in his letter to the buyer that he did not know who the seller was, and therefore could not have acted maliciously nor prejudiciously. The correctness of Dr. A.'s conclusions does not enter the question of redress; any examiner is liable to err, and if everyone who examined horses had to pecuniarily stand behind his opinion few veterinarians could be found who were willing to undertake such a task at the prevailing fees. If it were possible for Mr. Robbins to obtain a money indemnity for a real or imaginary injury in such a case as this, what would become of those examiners who pronounce a horse sound? The animal is sound to the best of his knowledge and belief *only*. And under the evidence Mr. Robbins' horse was unsound to the best of Dr. A.'s knowledge and belief, although sound to the best of the knowledge and belief of the other examiners. If the examiner believed the horse unsound and gave a different opinion he would have committed a criminal offense; but if his conclusions were based upon his honest convictions he gave the only decision admissiable.

LETTER OF TRANSMISSAL.

BROOKLYN, April 26, 1898.

Editors American Veterinary Review:

GENTLEMEN:—As I am in sympathy with Mr. Robbins in the enclosed matter, and as he is a well-known horseman in this city and a patron of mine, the subject being interesting, I hope you will find room in your May issue for it.

Yours truly, L. McLEAN.

LETTER FROM THE SELLER.

BROOKLYN, March 26, 1898.

Editors American Veterinary Review:

GENTLEMEN:—Through the medium of your journal will you have

the kindness to give your opinion upon the case mentioned in the enclosed statement?

The mare was sold by me as sound to Mr. Miller, and rejected upon Dr. Ackerman's certificate. Being impressed that the animal was sound, I had her examined by three reputable veterinary surgeons, who pronounced her sound, as per their several enclosed certificates.

Query:—Dr. Ackerman having pronounced the animal "unsound at both ends," and that upon a "superficial examination," have I any redress in the matter as against Dr. Ackerman?

This is not of interest to myself alone, but to your profession at large, and your opinion in the matter will greatly oblige,

Yours very truly,

CLARENCE H. ROBBINS.

58 Sterling Place, Brooklyn, N. Y.

DR. ACKERMAN'S LETTER TO THE BUYER.

BROOKLYN, March 8, 1898.

Dear Mr. Miller:

In reply to your letter of yesterday I would say that your request on Sunday was that you had a very gentle horse you wanted my opinion as to "whether he was a suitable horse for you, up to your weight, etc."

In reply to that, the horse was brought out and I made an examination as to his conformation, gait and last, but not least, a superficial examination as to his soundness.

After looking him over and seeing him move I said to you as the horse stood quiet, "I do not think he is up to your weight; he is too narrow-chested and barreled." I said, "See, you can see his knees trembling now," which they were while we stood looking at him. And I do not consider his gait a safe one for a saddle horse, especially to carry a weight, as he crossed his front legs too much and therefore likely to trip or stumble.

As far as his soundness is concerned, I said just as little as I could, but I will say that he wasn't sound at either end, and I will leave it to any three or five reputable veterinary surgeons to examine the horse without knowing anything about the case at all, whether he is sound or not. At the time of my examination I did not know the horse belonged to Mr. Robbins, and I did not care who he belonged to. You employed me and that is as far as I am ever interested. I try to render an honest opinion and protect the interests of my clients without doing the horse any more injury than the necessities of the case call for.

E. B. ACKERMAN, D. V. S.

CERTIFICATES OF OTHER VETERINARIANS.

BROOKLYN, March 6, 1898.

This is to certify that I have examined this day, at the request of Mr. Clarence Robbins, a clipped mare, stands about 15.3, rising seven years old, docked, with banged mane. White star on forehead; two white fetlocks behind, and with the exception of two small splents, which in no way interferes with her usefulness, I give it as my opinion that she is sound.

L. MCLEAN, M. R. C. V. S.

STAPLETON, N. Y., March 7, 1898.

This is to certify that I have this day examined for Mr. C. H. Robbins, a bay mare about 15¾ hands high, 7 years old, docked tail, white hind fetlocks and star in face, and to the best of my ability I find said mare sound.

JAMES MCKEE, V. S.

NEW YORK, March 4, 1898.

I certify that I have examined for Mr. C. Robbins, bay mare 15.3 hands high, seven years old, and that she is sound. Blemishes: Small splint, hypertrophied glands.

Remarks:—I had this mare jumped and driven; in fact, gave her a severe test. (Signed) H. D. GILL,

Member of the Royal College of Veterinary Surgeons, London, and Professor of Veterinary Surgery in New York Veterinary College.

(Reprinted from *New Albany Medical Herald*, for April, 1897.)

ESSENTIAL REQUIREMENTS OF A MODERN ANTISEPTIC.

BY ROBERT C. KENNER, A. M., M. D., LOUISVILLE, KY.

Seventeen years ago the entire world was aglow with the strides made in the domain of surgery by the introduction of antiseptics. It caused many good surgeons to believe that surgery would have an entirely new future. But now, after a thorough trial, antiseptics have come to be considered in their true light. We have come to regard antiseptics as indispensable, and their field of usefulness is clearly understood by the profession. When antiseptic surgery first was advocated by Sir Joseph Lister, he held many views which he soon abandoned as worthless. He operated under a carbolic acid spray. This he soon found to be useless, and he did not long depend upon carbolic acid as an antiseptic. In order to bring out the central idea of this paper—the requirements of a modern antiseptic—let me go over the most prominent antiseptics which have claimed the attention of the profession. The first antiseptic which in recent times gained the confidence of the profession was carbolic acid. This agent, from the fact that it was the one used by Lister, came to be depended upon all over the world. Its reign of favor however did not last long, as it soon came to be found to be an irritant and a poison, capable of doing a great deal of harm. When large surfaces were treated with carbolic solutions often patients died of carbolic acid intoxication. It is impossible, in many cases, to prevent a result like this, and many surgeons can give some sad experience along this line. Again, when all danger of causing carbolic acid poisoning was rendered impossible, it has been found that

the agent was an irritant to such a degree that wounds were rendered unhealthy or made to heal more slowly, than when they received no antiseptic at all. Again, it was demonstrated by a great many investigators that carbolic acid was not fatal to all pathogenic bacteria, and, therefore the agent has come to be laid aside as far as any of the purposes of a modern surgical antiseptic are concerned. After carbolic acid had come to occupy this place, we find corrosive sublimate to have gained a most widespread acceptance at the hands of the profession. This widespread acceptance is due to the fact that corrosive sublimate is positively fatal to many and most all of pathogenic bacteria. Over a hundred years ago Pringle, in an array of tests to demonstrate the value of antiseptics, found that carbolic acid would more quickly prevent or deter sepsis than any other agent. Pringle's work, however, was on other lines than ours. Yet he found out much that has since his day been rediscovered. Corrosive sublimate to-day may be said to be on the decline. In fact, few well informed surgeons will now employ it at all. The reason for the decline of carbolic acid in favor is that it is very poisonous and a most potent irritant. Possibly no drug is a greater irritant. One of the first things which caused corrosive sublimate to begin to decline was the fact that one of the leading surgeons pointed out that it would, when brought in contact with divided tissue, form an albuminate over all the surface of the wound, and that this would prevent the healing by first intention, and very often it would cause suppuration. We need have care, too, in using corrosive sublimate that we do not allow it to be used over extensive surfaces. If there is but a small amount absorbed, we shall find our patient with symptoms of poisoning. Again, in employing corrosive sublimate, it is necessary to bear in mind that it is easy to get it too strong. Many serious accidents occurred from this cause. Again, when we use corrosive sublimate, we find that it cannot be used with safety as a spray. For these reasons corrosive sublimate is a most dangerous antiseptic, and its going into disuse is for the good of the profession.

Iodoform has been long popular, but is now being relegated to the shades of disuse. This is so because this drug has a most disagreeable and objectionable odor, and it also produces cases of poisoning. For these reasons iodoform has gone practically out of employment. But iodoform is a powder and cannot be brought into a solution, and, therefore, should it be non-poisonous, it would not be applicable in a large number of cases.

The requirement of the modern medical man for an antiseptic is not supplied, as we have seen, in any of the agents above mentioned. My opinion is, that we have in hydrozone the strongest antiseptic known to the medical profession, and it is now employed extensively. It is three times the atrength of peroxide of hydogen, U. S. P. officinal, and it is in no sense an irritant or a poison. It can be taken internally, as in cases of gastric catarrh and dyspepsia, causing fermentation, and as an intestinal antiseptic, without the slightest danger of producing poisonous results, or without the least danger of producing irritation. One of the greatest sources of benefit which we derive from this agent is the antiseptic effect which it produces in throat diseases. Hydrozone diluted half and half with water is the best remedy for tonsillitis. This sprayed against the tonsils when an attack is in its incipiency will in every case abort it. It should be sprayed thoroughly against the tonsils every fifteen minutes or half an hour until the pain and difficulty of swallowing has been dissipated. But this need not be continued longer than four hours with this frequency. After that every two hours will suffice, and generally not more that six or eigth hours are necessary to effect a cure of tonsillitis. But the best effects of hydrozone will be seen in diphtheria. Here its employment will bring us good results by rendering the parts antiseptic and limiting the affection. It is claimed by the best observers that if the nose is sprayed in attacks of diphtheria we will have no false membrane in the nose.

But this is not all. As an injection in the strength given above, it gives the best results in leucorrhea and gonorrhea in females. It is above all remedies for the cleansing out of abscess cavities. It will never cease to bubble as long as there is any pus in the cavity. In nasal catarrh, in ozena and all inflammation of the mucous membranes its action is that of a most powerful antiseptic. In other words, it begets absolute cleanliness, destroying all pathogenic germs, and renders in the diseased structure an absolutely healthy condition.

No remedy equals it in carbuncles. Here it destroys the pus and core, and causes the diseased structure to take on a healthy action.

We may, therefore, not hesitate to claim that this antiseptic meets the demands of the physician and surgeon more nearly than any other agent of its class at their disposal.

TELL your fellow-practitioner about the REVIEW.

CORRESPONDENCE.

MATRICULATION IN THE VETERINARY SCHOOLS OF NEW YORK.

Editors American Veterinary Review:

DEAR SIRS:—As your May issue quoted the article from the *Turf, Field and Farm* on "Veterinary Schools in the State," I beg the courtesy of your pages to correct some inadvertencies into which the writer of that article had fallen, and which were set right in the same paper in the number for April 29, 1898. As the matter is now, by your May issue, placed before the veterinary profession it is important that it should not be left in a form which is likely to prove misleading.

In carrying out the provisions of the law, which demanded a full high school course, representing 48 counts, the Regents did not demand the subjects named as obligatory in the newspaper article. Excepting the 8 counts in English which are demanded of all candidates, they allowed the fullest liberty in choosing from the entire range of high school studies. As indicated in the Regents' examinations hand-book, it seems as if the candidate might take 38 counts in English alone, and the remaining 16 counts might be taken in arithmetic, geography, drawing and other simple subjects without a single foreign tongue, or hard scientific study. The rule acted on by the Regents in the past year has been to accept pass cards for *any* 48 academic counts.

It is perfectly true that hitherto certain veterinary schools in America have admitted students with practically no preliminary examination. But the men who were unable to have taken such preliminary examination are handicapped for life unless they can overcome their deficiency by hard work in the future.

When a veterinarian has been wanted to undertake scientific work, as in agricultural schools and experiment stations, the choice has almost invariably fallen on one who has a bachelor's degree, or at least what the New York law demands for matriculation in a veterinary college. The following culled from the official list serves to illustrate this:

Illinois, D. McIntosh, V. S.; Michigan, G. A. Waterman, V. S.; North Dakota, W. C. Langdon, D. V. S. (3) In which the education was not more apparently than the veterinary college education.

South Carolina, W. E. A. Wyman, D. V. S., post graduate course; Massachusetts, J. B. Paige, D. V. S., post-graduate in

Europe; Ohio, D. T. White, D. V. S., post graduate in Europe. (3) Supplemented American veterinary college education by post graduate studies.

Alabama, C. A. Cary, D. V. M.; J. F. Connor, D. V. M.; Iowa, W. B. Niles, D. V. M.; Mississippi, J. C. Robert, D. V. M.; Texas, M. Francis, D. V. M.; Virginia, E. P. Niles, D. V. M.; T. S. Roop, D. V. M.; Washington, S. B. Nelson, D. V. M.; Iowa, R. A. Craig, D. V. M.; Connecticut, N. S. Mayo, D. V. M.; Delaware, H. S. Eves, D. V. M.; Ohio, J. G. Boyd, D. V. M. (12) Matriculated in a State College and pursued a longer course, of 3 or 4 years.

Indiana, A. W. Bitting, B. S., D. V. M.; Maine, F. L. Russell, B. S., V. S.; Maryland, S. S. Buckley, B. S., D. V. S.; Iowa, M. Stalker, M. S., V. S.; Oklahoma, L. L. Lewis, M. S., D. V. M.; Kansas, Paul Fischer B. Ayer, D. V. M.; Arkansas, R. R. Dinwiddie, V. S., M. D.; Minnesota, M. H. Reynolds, V. M., M. D.; Missouri, J. W. Connaway, M. D. C., M. D.; Vermont, F. A. Rich, V. S., M. D.; Washington, D. C., D. E. Salmon, D. V. M., F. R. C. V. S.; A. M. Farrington, B. S., B. V. S.; C. F. Dawson, M. D., D. V. S.; Nebraska, A. T. Peters, D. V. S., Berlin graduate. (14) Have medical or college degree in addition to the veterinary one.

Louisiana, W. H. Dalrymple, M. R. C. V. S.; New York, J. Law, F. R. C. V. S. (2) Degree of the Royal College of Veterinary Surgeons, England.

Summary.—Degree of common American veterinary college, 3; college degree in addition, or State college matriculation and prolonged study, or medical, or English veterinary degree, 31.

To a man proposing to enter on the study of veterinary medicine such a showing must be suggestive. If he would acquire a standing in his chosen profession, he must step out of the old ruts and put himself in relation to the modern movement.

Europe has long recognized this truth, and hence the veterinary profession in Europe stands much better with the Government and people than does the profession in America. In my paper before the Associated Faculties of Veterinary Colleges last August, at Nashville, this point was brought out clearly, but I may summarize it more shortly for this letter. All the European veterinary schools demand an elaborate matriculation examination; in five cases Latin is obligatory, and in several, one other language in addition to this, and the native one.

Then the professional studies in three European veterinary schools extend in different cases, from three and one-half to five years, of at least nine months each, and it is a very common thing for the student to take an extra year because he cannot accomplish the work in the time prescribed.

If we are to learn anything from the experience of the Old World, and the demands of the New for scientific veterinary work, the lesson would seem to be unquestionably that our average American veterinary college has lagged behind and is failing to fulfill the demand of modern medicine and of our immense live stock industry. The domestic animals furnish as many different genera in America as in Europe. They suffer from the same diseases; or if we lack one or two that are common in Europe, we can furnish at least a corresponding number that are peculiar to America. We yield to no European country in the numbers or values of our live stock. Why, then, should the guardians of their health and of the public health be one whit less accomplished or efficient than those entrusted with the same duties in Europe?

Who is to benefited by condemning America to a low veterinary standard? Certainly not the owner of valuable live stock, who has the first right to consideration. Certainly not the public health, which will suffer in ratio with our neglect of the sanitation of our flocks and herds. Certainly not the New York veterinarians, who will be doomed to compete with the aliens coming from the schools outside, which continue to move on the old lower plane.

The *Turf, Field and Farm* says the "veterinary colleges of this State are being strangled by the action of the Regents." It is the schools alone, then, that are to obtain the benefit of this cramping and dwarfing of the veterinary education of the State. If this were true, it might be fairly questioned whether a school has a right to profit at the expense of the great live stock industry, of the public health, and of the veterinary profession. But the dread of the schools is founded on a fallacy, and the sooner they can bring themselves into line with the full requirements of the New York law, the sooner will they enjoy the return of a full tide of prosperity, which will know no ebb.

The argument advanced for the lower class education would logically carry us very much further on the downward track. To obtain the existing New York law we had to recognize all existing practitioners, and thereby at once swelled the ranks of New York veterinarians to ten times their legitimate profes-

sional numbers. If we would accommodate our education to this state of things our college curriculum would be promptly reduced to a farce.

Again, with inferior requirements we simply invite from without the State the graduates of colleges educated on a still lower plane than our own. We injure the live-stock industry, and incidentally we undermine our own schools as regards both their efficiency and their profit. In the past our New York schools may have in a measure supplied the cities of Greater New York, but they have done comparatively little to furnish veterinarians for the inland cities and the great country districts. By adopting the full legal requirements for matriculation and graduation they would open up a new field for their graduates, which has hitherto been practically closed to them, and incidentally they would confer a great benefit on New York stock-owners.

It would not be an extravagant estimate to place the veterinary practitioners of New York, graduates and non-graduates, at 1000. On an average the practitioner will not remain in the active field for over 25 years. At this rate there would come a demand every year for 40 graduates in addition to those called for to do the higher class of work in other States. This would give ample assurance of support for one good veterinary college in the city of New York, even if it could only secure one-half of the total number of students. With a four-year course it might well mean 100 in attendance at each of two colleges.

The falling off in the number of students entering veterinary schools has not been confined to New York, but had set in all over the country before the passage of the New York law. It has a deeper reason, therefore, than the recent law of New York, and the cure cannot be had by the simple revoking of that statute. It makes it harder, however, for the old private schools to bear up under the general depression. The temporary reduction of the matriculation requirements to 24 counts may be needful to allow the New York school, formed by the coalescence of the two old ones, to tide over the period of trial, and as I stated at our meeting in Albany, I would not say a word in opposition, yet I cannot but consider it unfortunate that a full measure of the legal requirements could not be maintained. Time will tell, and I would not wish to prophesy evil, but it seems to me that even the 24 count requirement will drive students out of the State in large numbers, and it will

open the door to large numbers of graduates from alien colleges who can meet the 24 count requirement. Thus we will suffer alike in the number of our graduates, in their quality, in the restriction of the field for their practice, and in the advantages that we can offer to the New York stock-owners. By sustaining the New York statute, on the other hand, to the fullest extent to which this may be possible, we would open to our colleges a new career, higher and better than ever before, and secure at the same time a better sanitation of our herds and markets.

Dr. Schwarzkopf has touched on various vital points, in terms similar to those that were so strongly urged at our Albany meeting, and these should not be lost sight of in adjusting ourselves to the present and future. The two schools should unite to form one strong one, and this should sacrifice its independence for the prestige and the guarantee of high class work that will come from its amalgamation with a first-class university. The "livery stable type" of the school, and I would add of the matriculant, must be left behind, and we may hope for a more extended official recognition, and that better places may speedily open for the accomplished graduate. At present much of the legitimate work of the veterinarian is in this State left in the hands of laymen, or of medical men, who make no pretension to a knowledge of comparative pathology, and the only excuse is the low standard of education of the veterinarian. Let us raise that standard to the level of that required of the medical man, and the attempt to stop round holes with square pegs must cease and the sanitation of man and beast will be greatly advanced.

Respectfully,

JAMES LAW.

SOCIETY MEETINGS.

VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY.

In the absence of the President and Vice-President, the association was called to order May 4th by the Secretary, at 8.45 P. M., at the Academy of Medicine.

The Secretary asked the members to appoint a Chairman to conduct the meeting.

It was then regularly moved and seconded that Dr. Gill act as Chairman *pro tem.* Carried. Dr. Gill thereupon took the chair and proceeded with the regular order of business.

The following members responded to roll-call: Drs. C. C. Cattanach, J. S. Cattanach, J. S. Cattanach, Jr., Delaney, Ellis, Gill, Grenside, Lamkin, Machan, MacKellar and O'Shea.

The minutes of the previous meeting were read and approved.

Reports of Committees.—Dr. Gill, Chairman of Board of Censors, stated that as a quorum of that committee was not present they could not take action on important business in hand; therefore they had no report to offer to the meeting.

Dr. Gill reported for the Ways and Means Committee, in the absence of their chairman, that Dr. Lellman will read a paper at the June meeting on "Multiple Sclerosis of the Brain and Spinal Cord of the Dog," and a second essayist will be procured for the same meeting.

Judiciary Committee (Dr. O'Shea, Chairman) reported that the Governor had signed the jury bill and it is now a law. This report brought forth the applause of the members present.

Moved and seconded that the reports of the various committees be accepted. Carried.

Reading of Papers.—Dr. J. S. Cattanach read a paper entitled "Economy in the Practice of Veterinary Medicine," as follows:

Mr. President and Gentlemen:

The subject which I have selected to read before you this evening is "Economy in the Practice of Veterinary Medicine." It ought to be an interesting one, and I fear that I cannot do it justice, having been more than usually busy for the last two months, and have not had the time to devote to the paper that I ought to have had. I will, however, endeavor to bring to your notice some of my observations and experiences during a continuous practice extending nearly to forty years. By using the word "economy" I do not mean to convey that I advocate the purchasing of your drugs in "job lots," or at a bargain counter, but I do hope to advocate a method by which you will be positive that the medicines which you administer to your patients will be pure, unadulterated and according to the Pharmacopœia of the United States, or the pharmacopœia of whatever country you may select.

If the drug does not contain its full active properties, the practitioner does not get the expected result, and may have to give repeated doses to obtain that result. It surely would be economy to have the drug of its proper strength to start with, so that the one dose would suffice.

I presume that each of you gentlemen have your own pharmacy, and have a selection of medicines such as you are likely to require in the general routine of your practice. I shall not try to name the various ingredients which you are likely to have, but they are sure to be a goodly number. Now, gentlemen, are you sure that your drugs are chemically pure and made according to the Pharmacopœia? I mean the tinctures and other compounds. Did you make them yourself, or did you buy them already made? If you bought them already made, you are not sure that they are pure and made according to the Pharmacopœia. From my experience, it is important that the veterinarian should be capable of judging as to the genuineness of a drug from its general appearance, smell, etc., which can be accomplished to a great extent by reading up the Dispensatory. It describes each drug minutely, but there are many drugs, such as tinctures, ointments and other compounds that cannot be so judged. I, therefore, advocate the propriety of the veterinarian manufacturing everything that he possibly can, instead of purchasing it already manufactured, especially the more expensive preparations, that are more liable to adulteration.

The retail druggist would never think of purchasing at the wholesale house any preparation that he could manufacture himself, for the simple reason that he could not be certain of the genuineness of the compound; whereas when he makes it himself, he knows exactly what it contains, and can depend upon its efficacy. So with the veterinarian when he makes his own preparations, he can depend absolutely upon their thorough efficacy.

I shall call your especial attention to a few of the drugs that are extremely liable to adulteration. One of the most so is opium. There is no drug coming to this market that varies more in quality than that of gum opium, its quality depending on the percentage of morphia that it contains. The various kinds principally brought to this market are Turkish, Egyptian and East Indian. Smyrna gum opium yields from 16 to 21 per cent. of morphia, according to quality. Egyptian gum opium yields from 5-19 to 11-45 per cent. of morphia. Indian gum opium yields from 5 to 7 per cent. of morphia. So that Smyrna opium is just three times as strong as East Indian opium.

The United States Dispensatory directs that tincture opii should be made from Smyrna gum opium and is the standard tincture as recognized by the medical profession for prescriptions, as it then contains the full active properties of the drug. Tinc-

ture of opium made from East Indian gum opium would contain just one-third the active properties of that made from the Smyrna opium, or, in other words, one ounce of landanum made from Smyrna opium is equal to the three ounces of laudanum made from East Indian opium. Enormous quantities of this inferior opium is brought to this market, and I have no doubt a great proportion of it is used in the manufacture of the tincture, and sold to veterinarians. I say sold to veterinarians, because the druggist, as a rule, would consider it good enough for a horse, when he would not dare to use it in compounding the prescription of the family physician.

I manufacture all the tincture of opium that I use in my practice, and am very careful in selecting the best Smyrna opium for that purpose. I can make tincture of opium according to the Edinburgh Pharmacopœia in twenty-six hours. The formula is as follows: Take of opium dried, six ounces; rectified spirit, 40 ounces; water, 40 ounces. Digest the opium in the water near a boiling temperature for two hours, break down with the hand, strain and express; macerate the residue in the rectified spirit for twenty-four hours, then strain and express strongly; mix the watery and spirituous infusions and filter, when it is ready for use. The tincture thus made is as it ought to be, and can be depended upon. Be sure that you get the Smyrna gum opium. I have here a very good specimen of the drug. One of the peculiarities of Smyrna gum opium is that when you break it open, you find tears or what looks like small globes of water in its substance. I would also recommend that you make all the Majendi's solution that you use. It should contain sixteen grains of the alkaloid to the ounce of water. If you make the solution yourself, you know whether or not it is the proper strength, and can depend upon it.

Aconite is a drug that I have used extensively in my practice, and continue to use it in all acute cases of high temperature. I mean the tincture of aconite root. I used to buy the tincture from the wholesale druggist, and would often find its color of a lighter or darker shade. I would also find it to vary a great deal in its action. I have found it to be entirely useless; in fact, devoid of the active properties of aconite. As the drug is one that so much depends on its action, even life itself, in many cases, I made up my mind to prepare the tincture myself, which I have done for many years, and can always depend upon its action. I would strongly advise all veterinarians to do the same. The process of preparing the tincture is a simple

one, either by percolation or digestion. It is, however, necessary that you should be familiar with the appearance of the root. I have here an excellent specimen, which you may examine.

Liquor ammonii acetatis (also known as Mindererus spirit) is a preparation which I hold in high estimation. It ought to be made fresh daily. The practitioner should make it himself, which would be the only means he would have of knowing that it was freshly made. The process is a very simple one if litmus paper is used. A formula which I have had excellent results from in lung affections, especially where there is much debility and high temperature, is as follows;

℞ Liq. ammonii acetatis, ℥ xvi.
Spiritus ætheris nitrosi, ℥ iv.
Ext. hyoscyamus, ʒ iv.
Misce. Sig. Give the fourth part every six hours.

As an adjunct with the former I give potassii nitratis and chloride of ammonia, of each one ounce, in a pail of water, allowing the animal to take six or eight swallows, every hour.

Cantharides is an article of commerce extremely liable to adulteration, more especially in its powdered state. I have known it to have been supplied to the veterinarian adulterated 30 per cent., the article used in its adulteration being brown mustard. The high price encourages this fraud. I make it a point to procure the flies in their natural state, and can thus judge for myself if they are fresh and free from being moth eaten, and can thereby depend on their vesicating properties. The powdering of the flies is a rather disagreeable process if precaution is not taken, but with proper precaution it is not disagreeable. I have here a very good specimen of cantharides, whole in their natural state. There are numerous formulas for making the fly blister as used by the practitioner. My experience is that the best results are obtained by using biniodide of mercury in conjunction with cantharides. I esteem biniodide of mercury as an absorbent. One drachm biniodide of mercury to one ounce of Bazilicum ointment is probably one of the best absorbents for capped elbow, enlarged glands, or in dispelling or hastening the formation of pus. I have invented an absorbent which I have found superior to the former. It is hyd. biniodidi and potassae hydriodate, of each ʒ i; aqua, ℥ i. M. Sig. Apply with a tooth brush. This compound forms a clear and perfectly transparent solution. It acts like a charm in dispelling a curb. Just try it.

Aloes is a drug found in many countries, and it varies greatly in quality. Barbadoes aloes is that used almost exclusively in the veterinary profession. Cape aloes, a drug of less value and much less activity as a purgative, is often substituted for the genuine article, especially if supplied in its powdered state. It is of a liver color, and has a dull earthy fracture. Cape aloes is of a dark olive green color, is bitter and has a glassy fracture. I have here a very fair specimen of each.

Finlay Dun, in his "Veterinary Medicines," says that Barbadoes aloes should always be freshly powdered before using it. Now, I know that his method is more theoretical than practical, as Barbadoes aloes cannot be powdered in warm weather. It is my experience that aloes should never be given to the horse in a powdered state, as it is so slow in its action when given in that form, often producing gripes, and in some cases enteritis is the result. Barbadoes aloes should always be dissolved before administering it to the horse. I make an aloetic mass which is of the consistency of butter in winter, retaining this consistency in an ordinary temperature for any length of time; it also retains its full active properties, is invariably prompt in its action and never gripes. I have seen no aloetic mass to equal it. I invented the formula thirty-five years ago, and it is unknown outside of my three sons. I, however, intend to give the formula to my friend, Finlay Dun, for publication in his next edition of his "Veterinary Medicines."

I wish to call your attention to another feature in the practice of veterinary medicine, and that is in the mode of giving medicine to the animal. I am totally opposed to giving it in the form of a drench, and avoid doing so as much as I possibly can, for several reasons. One is that it is decidedly nauseating to the horse, and it will resist swallowing the liquid to the utmost degree, causing probably the half of it to be spilled and lost. Another cause of objection to drenching is in lung affections, which is a most dangerous process. I have seen death result from the excitement caused thereby on more than one occasion. I prefer giving medicine to horses in pill form, because by this method the animal actually gets the drug without being disturbed and is not nauseated in its administration. My son Jack has discovered a method to give liquids in pill form. His *modus operandi* is to make a cartridge with a piece of paper moulded on a round piece of wood, or, what is most convenient, a broom handle, fill the cartridge with dry wheaten bran, pour the liquid over the bran, which will absorb its own bulk.

One to one and a half ounces of liquid may be given in each cartridge, as I will illustrate. I have no doubt some of you will appreciate this discovery of a method of giving liquids; and others of you may not like the balling process, for fear of cutting your hands, but with the assistance of a proper mouth speculum this is avoided.

There is still another method of giving medicines to the horse which is decidedly more effectual than either of the methods I have just read of and that is in using the alkaloids hypodermically. I claim the credit of being the first veterinarian who administered medicine hypodermically to the horse in this country. It was late in the sixties—I think in 1868.

A full discussion followed by all the members present.

Dr. Lamkin then read a paper on "Parturient Apoplexy."* This paper also met with a free discussion.

Moved and seconded that a vote of thanks be tendered to the essayists. Carried.

Moved and seconded that the meeting adjourn. Carried.

ROBERT W. ELLIS, D. V. S., *Secretary.*

CHICAGO VETERINARY SOCIETY.

The meeting was called to order on May 12 by President Walker. Thirteen members were present. The minutes of the previous meeting were read and approved. No report from Secretary. Treasurer's report showed $16.43 in treasury. The Secretary was requested to read the list of delinquents; they numbered twenty-nine, some of whom had left the city.

Motion by Dr. Johnson, seconded by Dr. Robertson, that the Secretary notify the members two years in arrears that unless their accounts were paid by the next meeting that they shall be dropped from membership. Voted. Carried.

Dr. E. L. Quitman desired to withdraw his resignation. On vote he was allowed to do so.

The regular programme in regard to soundness of horses was led by Dr. Hughes, as follows:

PAPER BY DR. JOSEPH HUGHES.

The great broadness of the subjects assigned to me causes me to deal with them extemporaneously rather than prepare a paper on such a comprehensive number of conditions. To begin with, I have some rather postive opinions regarding

Splints and their Relations to Soundness and Unsoundness. At a certain stage of its growth, a splint is merely a localized periostitis attended with

* Printed elsewhere in this issue.

a limited amount of effusion. Later on a bony exostosis appears on the site of the periostitis. During the stage of effusion lameness is present. As soon as the exostosis appears, lameness disappears. A formed splint then, that is a matured, a developed splint, a splint that is clearly apparent and could be detected by any novice, rarely causes lameness. I say rarely, because I recognize the fact that we sometimes find a splint of very considerable extent propped up against the lower row of bones of the knee, which may interfere with the action of the joint or set up a localized synovitis. This is an instance in which a formed or mature splint produces lameness. When, however, a splint is placed below the line of the carpal articulation and having no relation with it, no matter whether it involves the lateral aspect of the metacarpal bone, the furrow between the large and small metacarpal bones, or the lateral aspect of the small metacarpal bone, I make the statement that it is harmless and will not give rise to lameness. Even in these cases involving the posterior border of the small metacarpal bone and slightly bending over the tendon, in my opinion they rarely interfere with the usefulness of the animal, except during the stage of their development. When I examine a horse for soundness and a splint of considerable dimensions is present on the inner aspect of the metacarpal region, say midway between the fetlock and knee, the purchaser generally puts the question,—"Will the horse get lame from that splint?" If I find that the horse's action is clean and there is no tendency to interfere with the growth, during motion, I unhesitatingly say, no. Sometimes splint lameness afterwards develops in that particular limb, but when a careful examination is made, the developing splint will be usually found to affect the OUTSIDE of the region of the canon bone rather than the inside. In my opinion horses should be rejected that have developed splints close up to the knee, but we can safely overlook those exostoses when further down. There are many other points connected with the location of the splint and its relation to soundness, such, for instance, as splints located in the channel between the small and large metacarpal bones, the consideration of which I hope will be brought out during the discussion which will follow. Regarding

Thickenings or Sprains of Tendons, and suspensory and check ligaments, it may be stated broadly that such conditions give rise to unsoundness. A thickened tendon or ligament, means a shortened tendon or ligament, owing to organized effusiou in the interfibrous structure, and it is plain that a horse with a shortened tendon or ligament cannot be as useful as one in the normal condition. In deciding as to whether a thickening involves the fibres of the tendon, or the paratendineum, one must depend upon the amount of flexion present in the limb while in the quiescent state, upon the action of the animal during movement and upon digital manipulation of the part. Thickness in this region should be always looked upon with suspicion. Remarks made would apply to the condition known as bowed tendon. In race-horse practice, where sprains of tendons and ligaments are common and horses are continuously changing hands, we are often called upon to give an opinion on the seriousness of thicknesses affecting these tendons and ligaments. Thicknesses, however slight or insignificant, unless they are confined to the paratendineum, are very serious in these animals. In my opinion strain and thickening of the inferior carpal or check ligament is the most

serious of all. Next to this is thickening of the suspensory, then thickening of the perforans and lastly of the perforatus.

"*Buckshins,*" *or* "*bucked shins.*"—This is a condition that one might say is entirely confined to race-horses, and being a diffused periostitis we often find exostosis involving the lower and anterior extremity of the metacarpal bone. Lameness is as a rule only present in the acute stage. Sometimes, however, the exostoses encroaching upon and involving the synovial membrane of the fetlock joint, producing more or less permanent lameness. These lower exostoses are known in racing parlance as osselets. The race-horses affected with them should be considered unsound, more especially if the animal is under four years old. In aged horses where there is no lameness associated with their presence, I think they may be overlooked.

Sprung Knees, on account of limiting the animal's usefulness and on account of detracting markedly from the appearance of the animal, besides having a tendency to cause stumbling, should be regarded as unsound. I am aware of the fact that there are horses with badly sprung knees who give the utmost satisfaction in the work which they are required to do. Horses having an oblique shoulder blade with sprung knees do not usually stumble and in passing on the seriousness of the condition the conformation of the shoulder should always be considered. I hold, however, that the usefulness of an animal having sprung knees is markedly interfered with and is a condition often associated with disease of other parts, and as such animals frequently stumble they should be rejected.

Scars of Neurotomy.—In examining the region of the canon it is unnecessary for me to say that scars resulting from an operation of neurectomy are sufficient cause to reject the animal.

Firing.—The marks of a firing iron are not neccessarily an evidence of unsoundness. For instance, an animal may have been fired for what was supposed to be splint lameness, when perhaps the lameness might not have been located at that point, or the animal might have been fired for a supposed tendon trouble. Should we find on examining such an animal that there is no lesion of tendon, ligamentous or osseous structures and the prospective purchaser does not object to the scars made by the iron we should consider the region sound.

Interfering between the knee and fetlock should be regarded as unsoundness. Of course in arriving at such a conclusion we should take into consideration the general conformation of the fore limbs. Animals which toe out and stand base narrow are most prone to this trouble. The condition is still more aggravated if the chest is narrow. Horses with such conformation should be rejected in every instance.

DISCUSSION.

Dr. Hawley: I wish to make a remark on one point in regard to interfering. I think I can state positively that about eight out of ten horses that come from the country to the city that have never been shod behind will interfere with the first pair of shoes. If you were to condemn all horses that interfere you would have to condemn eight out of ten of these cases.

Dr. Hughes: Interfering as I dealt with it covers interfering between the fetlock and knee only—hitting the shin.

Dr. Walker: Regarding neurectomized horses you say you would in all instances reject them.

Dr. Hughes: Yes, in every instance.

Dr. Walker: I was consulted a few days ago on a case like that. A party called at my office requesting me to examine a horse for him belonging to a doctor that he was going to purchase. The doctor asked $200 for him. I saw that the horse was neurectomized. The doctor admitted that his horse went lame some time ago and that when consulting his veterinarian he (the vet) stated that there was a nodule on the nerve which had to be taken off. After this was done the horse went all right. I advised party not to buy the horse.

Dr. Robertson: In regard to the question of shaky knees. Now, I have known of many horses that were very good and that were kept in the barn, especially box-stalls, during the winter and put suddenly to work in the spring that have developed shaking of the knees. I had several cases this summer. One in particular had it in a very marked degree. She was blistered in her back tendon and has done her work since well. Therefore one would have to be careful that he should know something of the history of the case before he rejects a horse. Regarding interference I would echo the sentiments of Dr. Hughes. Of course interfering of the canon bone is unsound. I agree with Dr. Hughes that up to within the last year or two, horseshoers made a great mistake when shoeing green horses by lessening the circumference of the foot to such an extent as to cause interfering. I would also suggest that in examining a horse, one be very careful if a green horse has been shod and is afflicted with overreaching. The trouble was that the horseshoer has cut a large amount of the wall, making it as low as possible and raised the horse's foot up behind and also the toe in front, and the consequence was that he clicked at every step he made. As soon as he changed this it lessened the interfering to a very perceptible degree. Use judgment in regard to the amount of wall that is to be taken off and the kind of shoe put on a green horse. I would recommend for a green horse to cut off just as little of the wall as possible and shoe him as light as possible.

Dr. Ryan: Did you not find that in most cases of sprung knees a great deal is due to the conformation. The conformation is not correct?

Dr. Hughes: Decidedly. Anyone on a breeding farm will have noticed it in colts growing up right from colthood. It is a very common thing to find and he may have a perfect conformation of the shoulder. Standing a horse in a stall with an inclined floor is a common cause. The opinion of some people is, that he will straighten up again. I say that in every instance one of those should be condemned.

Dr. Hawley: Supposing one buying a horse would buy him for the show ring, he was an extra high-going horse of beautiful appearance slightly sprung in the knees, a horse that the judge in the show ring would not condemn, a horse that would pass in the show ring as sound, would he have to be condemned by the veterinarian?

Dr. Hughes: If I were the veterinarian I would condemn him, for if it comes to a question of downright soundness you would have to throw him out.

Dr. Robertson: I was called to treat a horse a few weeks ago of splendid conformation and high action. He was standing all winter

idle, and was remarkably shaky after the first drive. His knees just quivered. The owner told me he gave him a very hard drive. I recommended rest for a few days, and after treating him he seems to be doing all right. Would you have pronounced him unsound on account of this little shaking of the knees?

Dr. Hughes: My old preceptor gave me good advice in cases of this kind. That is, if you find an instance where you suppose the trouble or lesion is of recent occurrence—be fair to the dealer and to the buyer; bring them together and say, "Now you can wait for this horse for a week or two. He is a little off and may be all right in a short while."

Dr. Ryan: In regard to horses cut out in the knees, do you consider this as much a defect as over in the knee position, and do you consider them unsound?

Dr. Hughes: I do, but not as much a defect as going over at the knees. Everybody knows what going over the knees is, while one cut out in the knees is very seldom noticed. An everyday horse could be possibly passed, but a fine horse I would reject.

Dr. Greiner: Do I understand right that Dr. Hughes pronounces a horse with a splint without lameness as sound? None of the people that I have to deal with care to buy a horse with a splint.

Dr. Hughes: In answer to this I would say that Dr. Greiner must educate his people to tolerate splints. I do not attach the slightest importance to the presence of developed splints when they are away from the knees.

Dr. Hawley: Mr. President and gentlemen: In regard to the question of unsoundness, especially small defects. Now a man that deals in light harness horses, for instance, is no more a thief than the one that buys them, and therefore should be given the same consideration. I claim that no man is fit to examine horses for soundness until he has gone on the market and purchased horses extensively; therefore, a veterinarian in examining horses for soundness ought to consider both sides of the question before he rejects a pair of horses.

On motion, the discussion was closed.

Motion by Dr. Hughes, seconded by Dr. Ryan, that no meetings be held during July, August and September. Voted. Carried.

Motion by Dr. Campbell, seconded by Dr. Allen, that the President call upon the officers of the St. Andrew Society, and ascertain what rental they will accept for the room we now occupy by the year. Carried.

Under new business a letter was read by the Secretary, from our former member, Dr. James Henderson, now of Scotland, setting forth his thanks for the resolutions of this society in his behalf and wishing the society all prosperity. A letter was also read from the Civil Service Commissioners of Chicago, stating they did not know when an examination for police veterinarian would be held. On motion adjournment.

L. CAMPBELL, D. V. S., *Secretary.*

UNITED STATES V. M. ASSOCIATION.

Preparations for the thirty-fifth annual meeting, which takes place in Omaha, Neb., Sept. 6, 7, and 8, are progressing satisfactorily, and advices from the officers in charge of the programme are very hopeful that this session will be superior to all its predecessors.

Secretary Stewart has issued the following circular letter to members, which gives a good general outline of the details of the programme :

KANSAS CITY, May 20th, 1898.

DEAR DOCTOR :—The annual meeting of the U. S. V. M. A. to be held at Omaha, Nebr., September 6 to 9, 1898, will be one of larger interest to our members and others than any held heretofore, and by this letter you will get in outline, some hint of the richness of the scientific feast in preparation for those who attend.

Meat Inspection, especially as applied to municipalities, will be discussed, and the following several phases will be presented by special papers: Methods of Cultivating Public Opinion in Favor of Municipal Inspection; The Necessity for Consolidation of Municipal Slaughter-Houses into Large Abattoirs under Municipal Control; Reasons for Meat Inspection; Slaughter-House Inspection; Retail Market Inspection; Disposition of the Flesh of Tuberculous Cattle.

As veterinarians everywhere are interested in and desire to help bring about meat inspection in their respective cities and towns, this discussion must certainly prove very helpful. To make the discussion still more interesting and helpful, a large variety of specimens of diseased tissues and organs, found in slaughter house inspection, will be exhibited in the fresh state.

Many papers will be read which relate to general practice, and some of them will be illustrated by clinical demonstration. The Nebraska Association will provide a number of animals requiring surgical operations for relief from abnormal or diseased conditions. These operations will be performed by well-known members of this Association. The clinical feature of this meeting cannot fail to be very interesting, and you are given this timely notice that you may plan to attend. The following operations will probably be demonstrated: Methods of Securing Animals for Surgical Purposes; Methods of Producing Anæsthesia; Ovarectomy in the Mare; Cryptorchid Castration; Arytenoidectomy; Median-Neurectomy; Caudal Myotomy (straightening, setting up, docking); and some dental operations.

The Local Committee of Arrangements has planned to make attendance at this meeting most agreeable, the arrangements providing for special entertainment for the ladies accompanying members and visitors (and the ladies are especially invited). The Trans-Mississippi Exposition will be at its best, and will nearly approach the Columbian World's Fair in character and extent of display. This Exhibition will add greatly to the pleasure of the sojourn at Omaha.

Three proposed amendments to the Constitution and By-Laws will come before the Association for its consideration and adoption or rejection :

1st. To change the name of the Association from "The United States Veterinary Medical Association," to "The American Veterinary Medical Association."

2d. To change Article III. of the Constitution to the effect that the President shall be elected for a term of two years instead of one year, as at present.

3d. To change the annual dues from "five dollars" to "three dollars."

Certainly every member is interested in the proposed changes, and particularly in the one relating to a reduction of the annual dues. The condition of the treasury at the opening of the last meeting was such that all officers and committees, who have to take into account the financial affairs of the Association, recommended that the proposed reduction be made. The By-Laws provide that dues shall be paid in advance, and if the members would all balance their accounts for dues, there would remain no obstacle to the adoption of the proposed reduction.

The present state of the treasury permits the prompt publication of the proceedings of our meetings, and the Publication Committee was enabled to place the report of the last meeting in your hands within sixty days after the close of the Nashville meeting. Many letters expressing appreciation of this report, both for its prompt publication and the fullness of detail, have been received. The Committee welcomes criticism of this report, as well as suggestions intended to increase the value of the report of the meeting to be held at Omaha. If you intend to prepare a paper for the programme of the Omaha meeting, and you are respectfully urged to do so, you should notify me at once, stating title of same.

If there are any errors in the address on the enclosing envelope kindly advise of the same that our books may be corrected, and make more certain the delivery of future communications from this office.

If your neighbor veterinarian is likely to be interested in the work of this Association and would probably apply for membership if solicited, will you not write to the resident Secretary for your State and secure an application blank and copy of By-Laws, for your neighbor's consideration.

Enclosed find a statement of your account for dues. Be assured your Secretary finds the collection of dues an arduous task, and the issuance of notices of delinquencies an unpleasant duty. Will you kindly give this matter your early attention, and not make it necessary to send a second statement. Yours very sincerely,

S. STEWART, *Secretary.*

Dr. H. D. Gill, of New York, will demonstrate the operations on the horse's tail of docking, straightening, and setting up. Dr. W. L. Williams will demonstrate castration and spaying, both in the horse and in small animals. Dr. Tail S. Butler will exhibit his method of casting and confining for various operations.

In addition to the paper announced in the May REVIEW, Dr. Gill, of New York, and Dr. M. H. Reynolds, of Minnesota,

will each read a paper. Dr. Roscoe R. Bell announces the title of his paper as "Acute Indigestion in Horses."

MASSACHUSETTS VETERINARY ASSOCIATION.

The fourteenth annual meeting of this association was held April 27th, at the Quincy House, Boston, at which there was a large attendance of members.

A business meeting was held in one of the parlors and the following officers were elected for the ensuing year: President, John F. Winchester, D. V. S., Lawrence; First Vice-President, E. H. Holden, D. V. S., Springfield; Second Vice-President, J. R. McLaughlin, D. V. S., Newton; Secretary and Treasurer, Henry S. Lewis, M. D. V., Chelsea. Executive Committee—Langdon Frothingham, M. D. V., Boston; L. H. Howard, D. V. S., Boston; Howard P. Rogers, M. D. V., Allston; George Lee, D. V. S., Brighton; P. G. Connor, M. D. V., Boston.

The Secretary's report showed seven new members during the last year. The Treasurer reported the expenses for the year just passed, $187.80; received for dues for the same period, $170; on deposit in bank, $274.86.

The members then adjourned to the banquet hall with their guests, Mr. Leander Herrick, of the Massachusetts Cattle Commission, and Mr. D. S. J. Murphy, of Cork City, Ireland.

The President introduced Dr. J. R. McLaughlin as toastmaster, and the following toasts were responded to: "Our Country's Arms; May They Be Successful," Dr. Austin Peters; "Our Alma Mater, Harvard University," Dr. F. H. Osgood; "American Veterinary College," Dr. L. H. Howard; "McGill University," Dr. John M. Parker; "Massachusetts Cattle Commission," Mr. Leander Herrick; "Our Committee on Entertainment," Dr. L. Frothingham; "Usefulness of the Cow," Dr. W. E. Peterson; "The Absent Ones," Dr. J. H. Stickney; "Massachusetts Veterinary Association," Dr. J. F. Winchester; "Our Guest," Mr. D. S. J. Murphy; "Harvard Alumni," Dr. E. C. Beckett; "United States Bureau of Animal Industry," Dr. John S. Slee; "McGill Alumni," Dr. B. D. Pierce: "Watch Dog of the Treasury," Dr. H. S. Lewis.

Having done justice to all the good things served by the landlord, the evening was closed by the members standing and singing "Our Country," "Star-Spangled Banner," and "Should Auld Acquaintance Be Forgot."

HENRY S. LEWIS, *Secretary.*

NORTH CAROLINA VETERINARY MEDICAL ASSOCIATION.

The association met in Greensboro, N. C., Dec. 27, 1897, President Dr. C. R. Ellis presiding. Roll-call showed a fair representation of members present.

The President's address was pointed, and showed the necessity of strict sanitary regulations in our State as to meat and milk inspection.

Discussion followed, which led to a motion to appoint each member one of a committee to aid the Secretary in procuring the signatures of all physicians in the State who would aid in securing said regulations.

A committee was appointed on legislation, consisting of the President, Secretary, and Dr. W. C. McMackin.

Drs. Charles H. Lockwood, H. G. Bessent, and H. T. Bauer were appointed a Board of Examiners, one to serve three years, one two years, and the other one year.

Mrs. C. R. Ellis was elected an honorary member on account of the interest shown by her in the association.

Dr. John Lockwood, of Washington, D. C., was elected a member.

The association adjourned to meet in Wilmington, N. C., in July. J. W. PETTY, *Secretary and Treasurer.*

WESTCHESTER COUNTY VETERINARY MEDICAL SOCIETY.

At a meeting of the veterinarians of Westchester County on May 16th, at Yonkers, the Westchester County Veterinary Medical Society was organized, and the following officers elected: President, Dr. M. J. Tewey, Irvington; Vice-President, Dr. R. R. Morrison, White Plains; Treasurer, Dr. J. P. Nestler, New Rochelle; Secretary, Dr. W. B. Moorhouse, Tarrytown. We meet again to complete the organizing of the society on Thursday, June 2, in Yonkers. I think it will be a great success. W. B. MOORHOUSE, D. V. S., *Secretary.*

THE PENNSYLVANIA STATE VETERINARY EXAMINING BOARD

Will hold its next examination on the third Monday and Tuesday in June, in Philadelphia. Further information can be obtained by addressing the Secretary.

S. J. J. HARGER, *Secretary*, 205 N. 20th St., Philadelphia.

NEWS AND ITEMS.

L. H. HEMPELMANN, D. V. S., of St. Louis, Mo., has been ill, but is now convalescent.

PROF. R. S. HUIDEKOPER has been called to the military service in the present war with Spain.

DR. JOHN J. CATTANACH, of New York, will soon start upon a prospecting tour through the Klondike region.

VETERINARIAN P. M. MCARTHUR died at Hot Springs, Ark., and was buried in Winston, N. C., March 24.

OUR E. C., the *Journal*, stills proclaims that it "leads veterinary journalism in America." Whither, friend Hoskins, are you leading us?

SECRETARY J. W. PETTY, of the North Carolina Veterinary Medical Association, has removed from Greensboro to Winston, N. C. He has not enjoyed good health recently.

DR. CLAUDE D. MORRIS, Secretary of the New York State Veterinary Medical Society, has removed from Pawling and located at 50 Front Street, Binghamton, N. Y.

PROF. GEO. P. BIGGS, of the New York College of Veterinary Surgeons, was married on April 14th, to Miss Florence Browning, of New York. We wish him the greatest joy.

FRANK R. HANSON, D. V. S., of New York City, brother of Harry D., and also his business partner, has been very ill with pleurisy, but we are pleased to hear he is now a safe convalescent.

JOHN P. MESSER, D. V. S., graduate of the A. V. C., class '97, recently enlisted as a private in Company G, 71st Regiment, New York Volunteers, and has gone to the front for service in Cuba.

DR. G. HOWARD DAVISON, graduate of the A. V. C., '90, proprietor of the Altamont Stock Farm, at Millbrook, N. Y., has enlisted and gone to the front as veterinary surgeon of Troop A of New York City.

VETERINARIANS IN POLITICS is a healthful sign of the times. Dr. T. Earl Budd, of Woodbury, N. J., is a candidate for Councilman, and Dr. E. C. Porter, of Newcastle, Pa., is contesting three M. D.'s for the position of Coroner.

DR. WILLIAM H. PENDRY, of Brooklyn, was elected President of the Alumni Association of the American Veterinary

College at its last meeting, and was double honored by an excellent reproduction of his physiognomy in the May *Journal.*

ATKINS & DURBROW announce that veterinarians are ordering their Red Ball Brand Stock Food, and using it according to their suggestions in their advertisement elsewhere. The ingredients are not secret. They'll give you the formula if you wish.

CORNELL UNIVERSITY continues to reach out in the establishment of scientific schools. She is to open a medical department in the city of New York, the faculty to consist of those professors who recently resigned from the Medical Department of the University of the city of New York.

THE only case which has come under our observation of a lady becoming an honorary member of a veterinary medical association occurred at the last meeting of the North Carolina Association, when the wife of the President, Dr. C. R. Ellis, was unanimously elected on account of her great interest in its welfare.

ONE VETERINARIAN'S OPINION.—"The AMERICAN VETERINARY REVIEW is an indispensable means of keeping the rural as well as the city practitioner abreast with the advances of the profession, as well as with the most appropriate treatment of diseases.—D. F. Bowersox, Aaronsburg, Pa." Tell your fellow-practitioners about it. That's the way to make the REVIEW better.

GRAND RAPIDS VETERINARY COLLEGE.—The first commencement exercises occurred on March 25, in the college building. Dr. Dales presided and delivered an interesting address. The graduates were six in number, as follows: L. L. Conkey, M. T. Bonasiewicz, and George Harr, of Grand Rapids; Thomas Bunberry, Niles; A. H. Swift, Freesoil, and George H. Stevenson, Detroit.

THE ARMY VETERINARIANS are kept pretty well on the move in these stirring war times. Dr. W. V. Lusk, of the Second Cavalry, writes us under date of May 19, from Mobile, Ala., saying that the April issue had just reached him and was about worn out, having been forwarded from Fort Wingate to Leavenworth, from Leavenworth to Logan, from Logan to Chickamauga, and from the latter place to Mobile.

LAVAGE OR WASHING OF TRACHEA.—Profs. W. L. Williams and Pierre A. Fish described this operation in a commu-

nication to the REVIEW, in December, 1897, entitled "Inhalation Pneumonia," page 609. In a letter dated May 22 Dr. Williams says: "The lavage or washing of the trachea and bronchi is gradually pushing its way to the front, and must eventually assume a recognized place in surgical therapeutics."

A SPECIAL BULLETIN (illustrated) on the "Inspection of Meats for Animal Parasites" has just been issued by the Agricultural Department at Washington, D. C. The work was prepared under the direction of Dr. Salmon, Chief of the Bureau of Animal Industry, and discusses the subject under the following heads: "The Flukes and Tapeworms of Cattle, Sheep and Swine" and "Compendium of the Parasites Arranged According to Their Hosts."

DR. FRANK H. MILLER, who attended a two-year post graduate course at the Clinic for Small Animals in connection with the Veterinary School at Berlin, Germany, and subsequently located in New York City, as a specialist in diseases of dogs, cats, and birds, has been secured by the REVIEW to contribute a number of articles upon his specialty during the summer months. The first installment will be upon the interesting subject of "Follicular Conjunctivitis," and will appear in the July number.

DR. HERBERT NEHER, who has occupied the position of veterinarian to the Metropolitan Street Railway Company of New York for the past ten years, has resigned, and will move to his recently purchased estate in Fort Edward, N. Y. He has worked very hard since he graduated from the American in 1887 and has amassed a competency, so that he can afford to retire to a less active life and enjoy the fruits of his industry and frugality. He has been a diligent student in his spare moments and has done some clever microscopical work, which possesses special attractions for him. The metropolitan district can ill afford to lose him, as he was ever earnest in promoting the interests of his profession. We trust that with his increased leisure his brethren may receive the benefits of his energy through the medium of the journals.

COMMENCEMENT EXERCISES OF THE KANSAS CITY VETERINARY COLLEGE.—The seventh annual commencement exercises and banquet of this college occurred at the Midland Hotel, Kansas City, on Thursday, March 31, at 8.30 P. M., and the following gentlemen received their degrees: William N. D. Bird, John D. Cooper, Charles H. Davies, M. D., W. W. Johnston, M. D.,

and James Otterman, M. D. At the banquet, which offered a most delicious *menu*, were seated the faculty, graduates, and many friends of the college. Dr. S. R. Brooking acted as toastmaster, and Dr. C. J. Sihler presented the diplomas, the class response being delivered by Dr. W. W. Johnston. The toast to "Our Faculty" was responded to by Dr. S. Stewart; "Medical and Veterinary Profession," by Dr. I. J. Wolf; "The Veterinary Microbe," by Dr. O. W. Kreuger; "The Medical Man as a Fighter," by Dr. Leon Rosenwald; and "The Veterinarian's Place in Society," by Dr. George A. Johnson.

BACK NUMBERS REVIEW FOR SALE.

The following numbers of the AMERICAN VETERINARY REVIEW for sale, at 25c. each, from the year 1890 to '97, from year 1880 to '89, 35c. each:

Dec, '81, '82, '84, '85, '86,' 87, '88, '89, '90. '91, '92, '93, '94, '95, '96, '97. Oct., '81, '85, '87, '88, '89, '90, '91, '92, '93, 94, 95, 96, 97. Nov. '81, '85, '86, '87, '88, '89, '90, '91, '93, '94, '95, '96, '97. Sep. '81, '87, '88, '89, '90, '91, '92, '93, '94, '95, '96, '97. Aug., '81, '83, '85, '86, '87, '88, '89, '90, '91, '92, '93, '94, '95, '96 '97. July, '81, '84, '85, '87, '88, '89, '90, '91, '92, '93, '94, '95, '96, '97. April, '81, '83, '84, '85, '86, '87, '88, '89, '90, '91, '92, '93, '94. '96, '96, '97. March, '83, '84, '86, '87, '88, '89, '90, '91, '92, '93, '94, '95, '96, '97. Feb., '84, 85, '86, '87, '88, '90, '91, '92, '93, '94, '95, '96, '97. Jan., '82, '84, '85, '86, '87, '89, 91, '92, '93, '94, '95, '96, '97. June, '81, '84, '85, '86, '87, '88, '89, '90, '91, '92, '93, '94, '95, '96, '97. May, '81, '84, '85, '86 '88, '90, '91, '92, '93, '94, '95, '96, '97.

Apply to F. E. S., 141 W. 54th St., New York City.

ASSISTANTSHIP WANTED.

Graduate of A. V. C. with three years experience. Small salary and good opening. Address B. G., 157a Madison Street, Brooklyn, N. Y.

BOUND VOLUMES REVIEW FOR SALE.

I have the following volumes of AMERICAN VETERINARY REVIEW, bound full in sheep: Vol. XII, XIII, XIV, and XV; also, in cloth REVIEW bindings, Vols. XVI, XVII, and XVIII. Also, *Veterinary Journal* (England), Vols. XXIX, XXX, XXXI, XXXII, and XXXIII, cloth and half sheep. Address, T. J. TURNER, D. V. S., care Kingan & Co. (Limited), Indianapolis, Ind.

BACK NUMBERS REVIEW WANTED.

I need No. 6 of Vol. XVIII (Sept., 1894), and Nos. 5 and 6 of Vol. XIX (August and September, 1895). I have a number of duplicate numbers, which I would exchange.

A. W. BITTING, D. V. M, Purdue University, Lafayette, Ind.

FOR SALE.

A substantial and commodious brick veterinary infirmary, office and residence, centrally located in a thrifty city of 25,000, and surrounded by a very rich agricultural and breeding country.

The leading practice of the entire region has for fifteen years been and is still being conducted in this property.

It is offered at less than 60 per cent. of cost, with cash payment sufficient to insure sale, balance at low interest and as long time as may be asked.

An exceptional opportunity for an energetic, up-to-date man.

Address W. L. WILLIAMS, Cornell University, Ithaca, N. Y.